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JUL 22 1964

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

CURRENT SERIAL RECORDS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE
and
OREGON STATE UNIVERSITY
and
STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above
in cooperation with other Federal, State and private organizations.

AS OF
MAR. 1, 1964

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 2807, Portland, Oregon 97208.

PUBLISHED BY SOIL CONSERVATION SERVICE

| <u>REPORTS</u> | <u>ISSUED</u> | <u>LOCATION</u> | <u>COOPERATING WITH</u> |
|-------------------------|---------------------------------|------------------------|--|
| RIVER BASINS | | | |
| WESTERN UNITED STATES | | | |
| WESTERN UNITED STATES | MONTHLY (FEB.-MAY) | PORTLAND, OREGON | ALL COOPERATORS |
| BASIC DATA SUMMARY | OCTOBER 1 | PORTLAND, OREGON | ALL COOPERATORS |
| STATES | | | |
| ALASKA | MONTHLY (MAR.-MAY) | PALMER, ALASKA | ALASKA S.C.D. |
| ARIZONA | SEMI-MONTHLY (JAN. 15 - APR. 1) | PHOENIX, ARIZONA | SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION |
| COLORADO AND NEW MEXICO | MONTHLY (FEB.-MAY) | FORT COLLINS, COLORADO | COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER |
| IDAHO | MONTHLY (JAN.-JUNE) | BOISE, IDAHO | IDAHO STATE RECLAMATION ENGINEER |
| MONTANA | MONTHLY (JAN.-JUNE) | BOZEMAN, MONTANA | MONT. AGR. EXP. STATION |
| NEVADA | MONTHLY (JAN.-MAY) | RENO, NEVADA | NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES |
| OREGON | MONTHLY (JAN.-JUNE) | PORTLAND, OREGON | OREG. STATE UNIVERSITY OREGON STATE ENGINEER |
| UTAH | MONTHLY (JAN.-JUNE) | SALT LAKE CITY, UTAH | UTAH STATE ENGINEER |
| WASHINGTON | MONTHLY (FEB.-JUNE) | SPOKANE, WASHINGTON | WN. STATE DEPT. OF CONSERVATION |
| WYOMING | MONTHLY (FEB.-JUNE) | CASPER, WYOMING | WYOMING STATE ENGINEER |

PUBLISHED BY OTHER AGENCIES

| <u>REPORTS</u> | <u>ISSUED</u> | <u>AGENCY</u> |
|------------------|---------------------|---|
| BRITISH COLUMBIA | MONTHLY (FEB.-JUNE) | WATER RESOURCES SERVICE, DEPT. OF LANDS, FOREST AND WATER RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA |
| CALIFORNIA | MONTHLY (FEB.-MAY) | CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF. |

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

ISSUED

MARCH 8, 1964

Report prepared by

W. T. FROST, Snow Survey Supervisor
and

BOB L. WHALEY, Assistant Snow Survey Supervisor
SOIL CONSERVATION SERVICE
209 S.W. 5TH AVE., PORTLAND 4, OREGON

Issued by

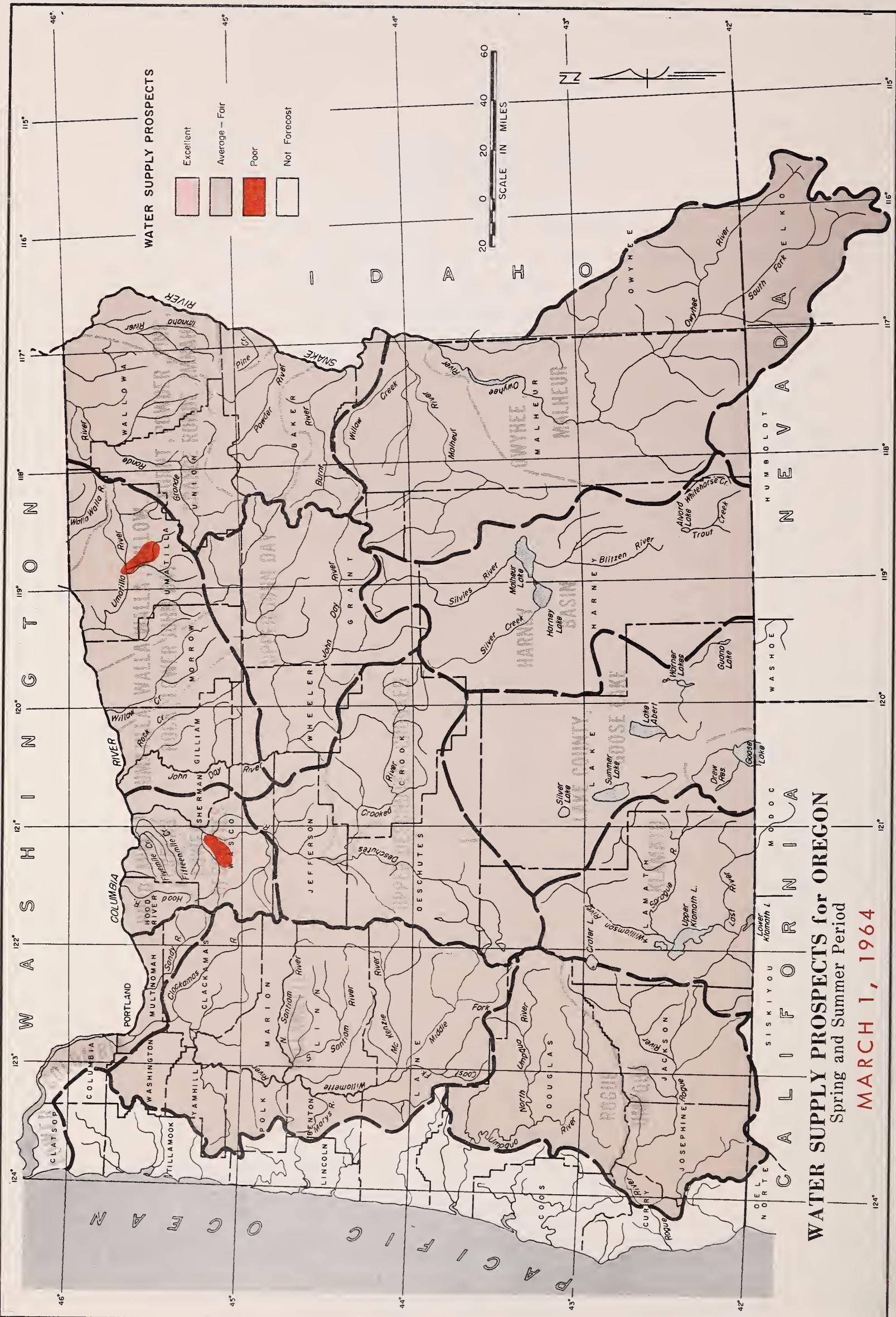
THOMAS P. HELSETH
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE

F. EARL PRICE
DIRECTOR
OREGON AGRICULTURAL
EXPERIMENT STATION

CHRIS L. WHEELER
STATE ENGINEER
STATE OF OREGON

TABLE OF CONTENTS

| | PAGE |
|--|-------------------|
| WATER SUPPLY PROSPECTS FOR OREGON.....(MAP)..... | FACING PAGE 1 |
| WATER SUPPLY OUTLOOK FOR OREGON..... | 1 |
| STORAGE STATUS OF OREGON RESERVOIRS.....(MAP)..... | 3 |
| SNOW WATER ACCUMULATION IN OREGON (STATEWIDE) ..(GRAPH)..... | 4 |
| SNOW WATER ACCUMULATION IN OREGON (AREAS).....(GRAPHS)..... | 5 |
| SNOW WATER ACCUMULATION IN OREGON (AREAS).....(GRAPHS)..... | 6 |
| MOUNTAIN SOIL MOISTURE IN OREGON.....(MAP)..... | 7 |
| VALLEY PRECIPITATION IN OREGON.....(MAP AND TABLE)..... | 8 |
| CURRENT OREGON STREAMFLOW.....(GRAPH)..... | 9 |
| DETAILED WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS | |
| OWYHEE, MALHEUR..... | AREA 1 |
| BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA..... | AREA 2 |
| UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY..... | AREA 3 |
| UPPER JOHN DAY..... | AREA 4 |
| UPPER DESCHUTES, CROOKED..... | AREA 5 |
| HOOD, MILE CREEKS, LOWER DESCHUTES..... | AREA 6 |
| LOWER COLUMBIA..... | AREA 7 |
| WILLAMETTE..... | AREA 8 |
| ROGUE, UMPQUA..... | AREA 9 |
| KLAMATH..... | AREA 10 |
| LAKE COUNTY, GOOSE LAKE..... | AREA 11 |
| HARNEY BASIN..... | AREA 12 |
| MAP AND INDEX OF OREGON SNOW COURSES.....(MAP) | |
| LIST OF COOPERATORS..... | INSIDE BACK COVER |



WATER SUPPLY OUTLOOK for OREGON

MARCH 1, 1964

Clear, cool February weather brought near record-low precipitation* which has slightly "dimmed" the satisfactory water supply outlook for the spring and summer of 1964. Although the outlook is still satisfactory for this irrigation season, stored water in a few reservoirs is short of the amount needed for an adequate crop season.

SNOW COVER

Water content of the mountain snowpack increased only slightly during February and is now 91 percent of the March first average. Just one year ago the (state-wide) snowpack was only 20 percent of the March 1 average.

SOIL MOISTURE

Watershed soils under the snowpack are pretty widely re-charged with moisture and will absorb only small amounts of snowmelt water during runoff.

RESERVOIR STORAGE

Water stored in 26 reservoirs now totals 78 percent of the 1943-57 average for March first. This will be adequate for usual irrigation requirements except for possible late season shortages for water users served from McKay Reservoir near Pendleton and Clear Lake Reservoir near Maupin.

STREAMFLOW

Streamflow** throughout the state has been greatly below average during February and the flow from October 1 through February 29 have varied from lows of 36 to 47 percent on the Umatilla and John Day, respectively, up to 84 percent on the Umpqua and 92 percent on the Klamath River.

Forecasts for spring and summer flow have been reduced from 5 to 20 percent as a result of the dry, cool February. The strongest flows, percentage-wise, are expected in Warner Valley near Lakeview with forecasts of 104 percent average on Honey Creek and 107 percent on Twentymile Creek for the March-June period. At the opposite end of the scale, the lowest flows are in the order of 80 to 83 percent expected on the main stems of the Crooked and Deschutes rivers.

The flow of most small streams heading in low-elevation watersheds will be slightly below average this year but should furnish near normal amounts of irrigation water.

This evaluation of water supplies is dependent upon a continuation of normal accumulation of snow and a spring snowmelt season favorable for runoff.

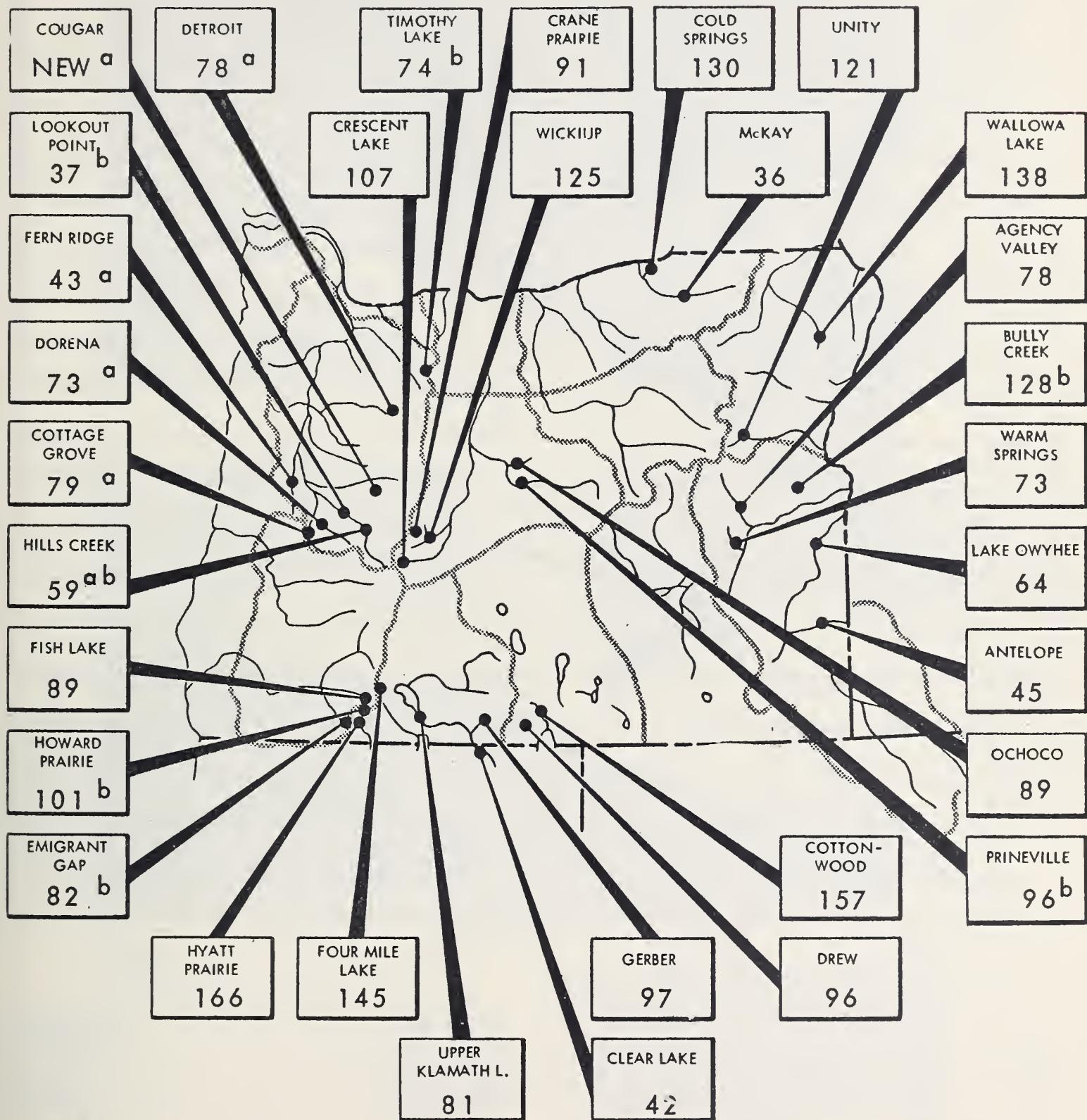
*From preliminary data furnished by U. S. Weather Bureau and other cooperators.

**From preliminary data furnished by U. S. Geological Survey and other cooperators.

STORAGE STATUS of OREGON RESERVOIRS

as percent of 1943-57, 15 year average

MARCH 1, 1964

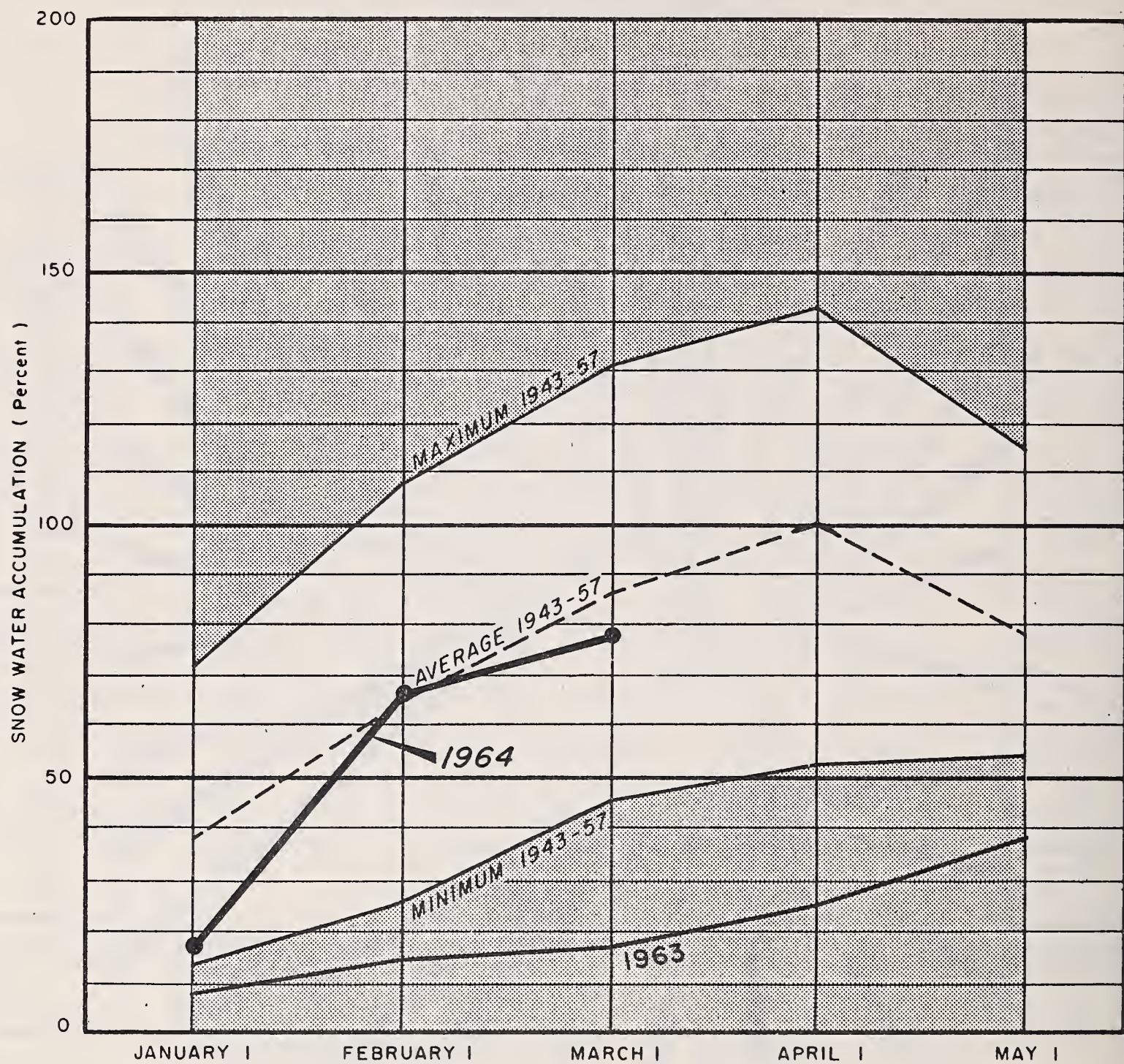


(a) Multiple purpose reservoir - space reserved primarily for flood runoff.
 (b) Short record - compared with last year on this date.
 N.R. - No report.

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SNOW WATER ACCUMULATION in OREGON

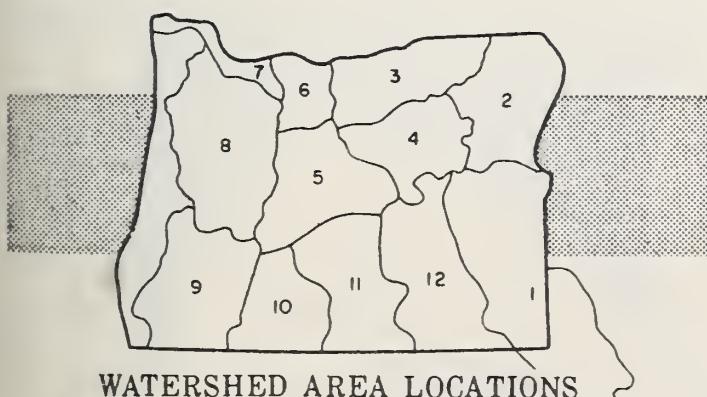
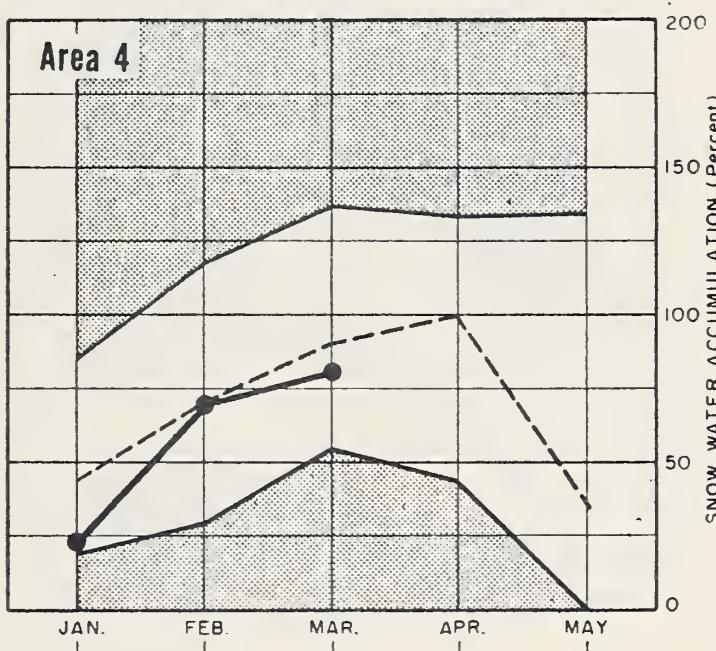
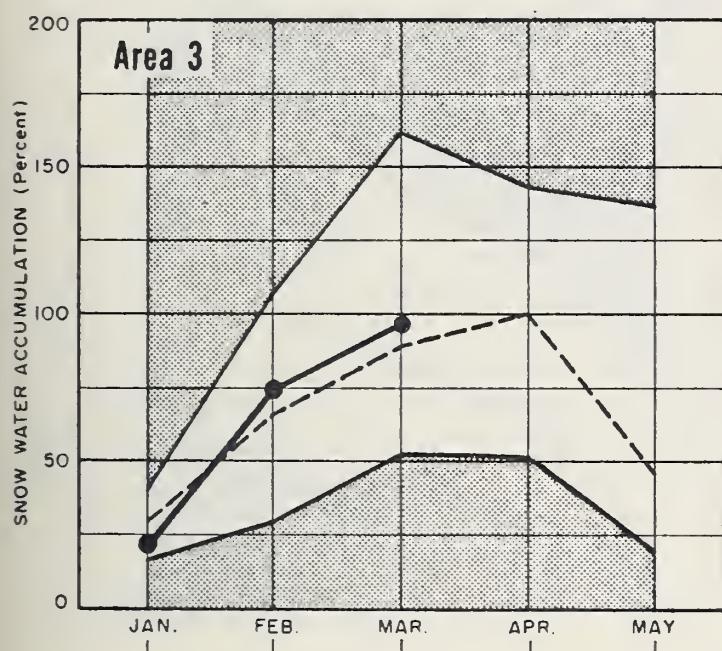
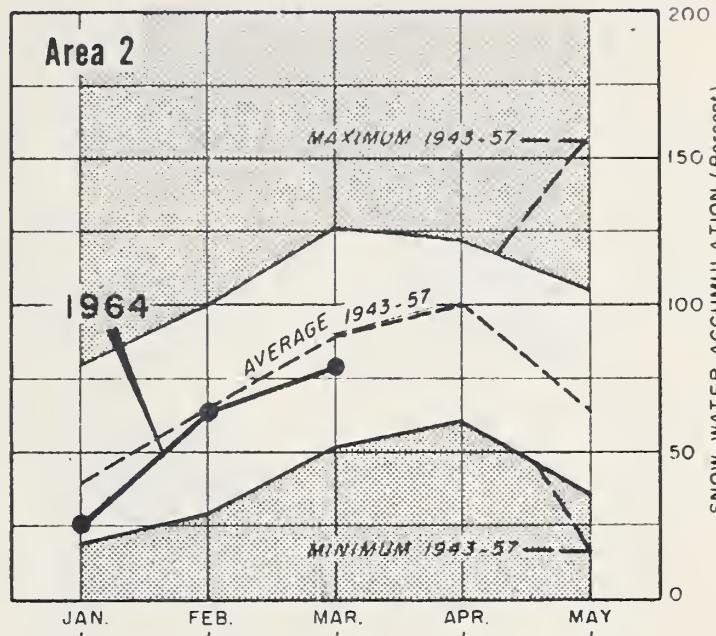
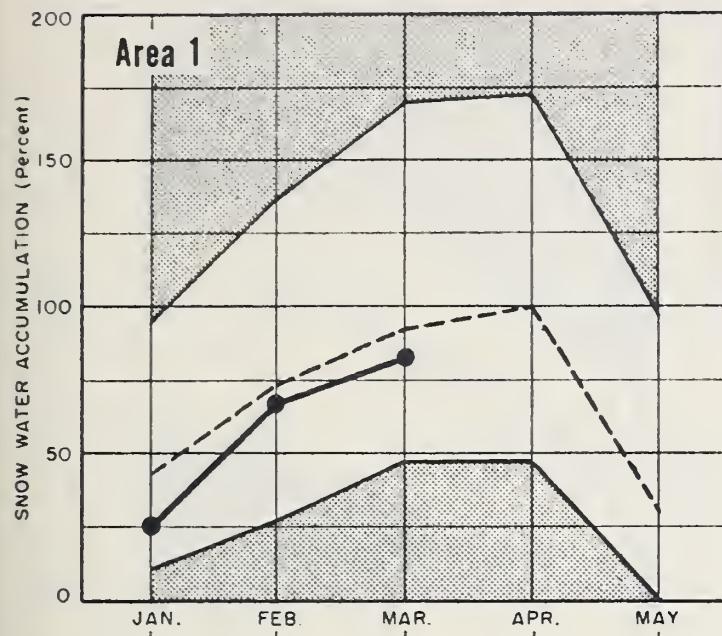
MARCH 1, 1964



SNOW WATER ACCUMULATION in OREGON

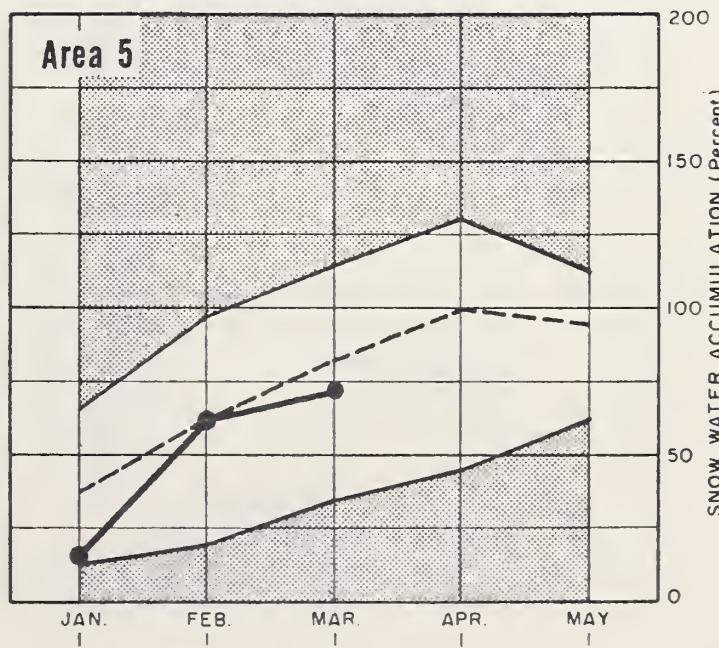
(Percent of average maximum accumulation)

MARCH 1, 1964



WATERSHED AREA LOCATIONS

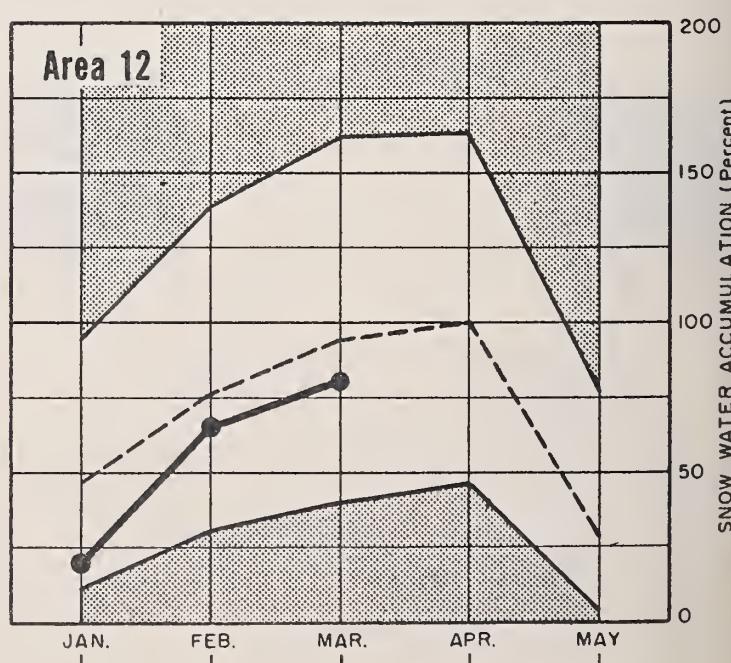
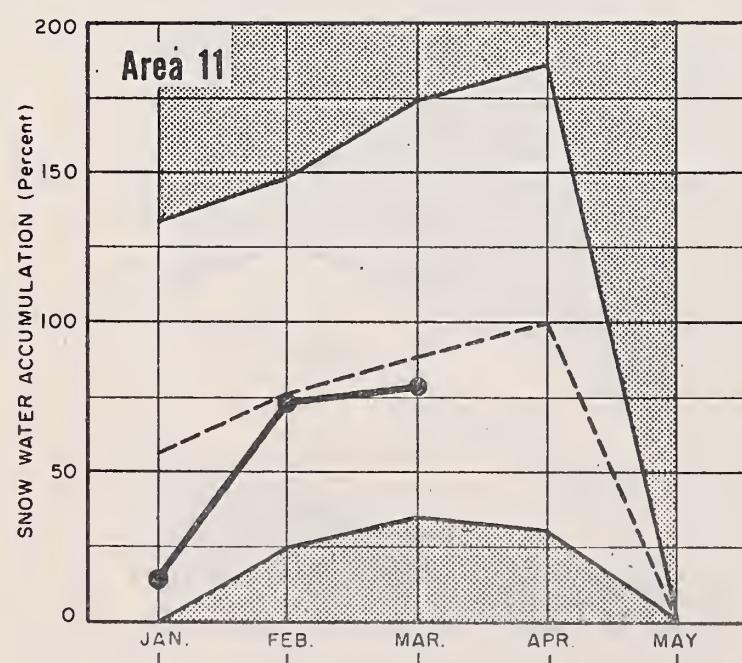
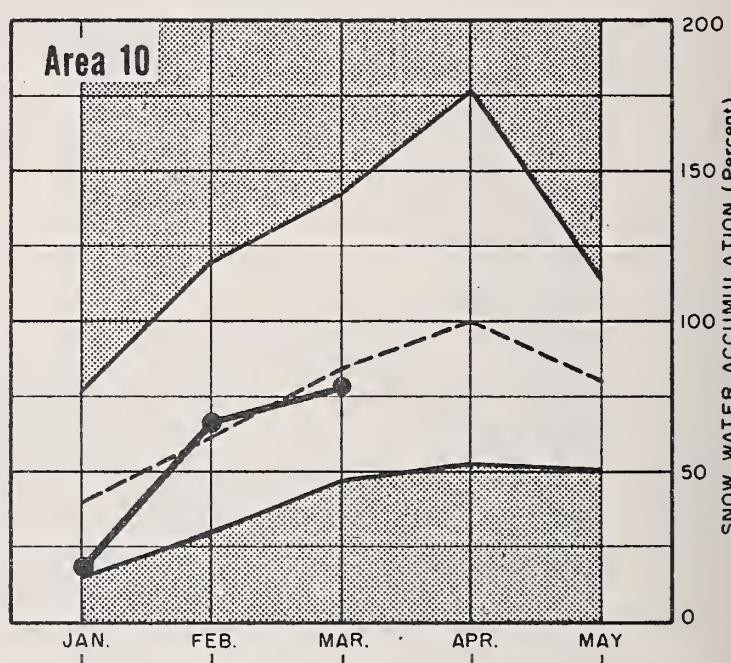
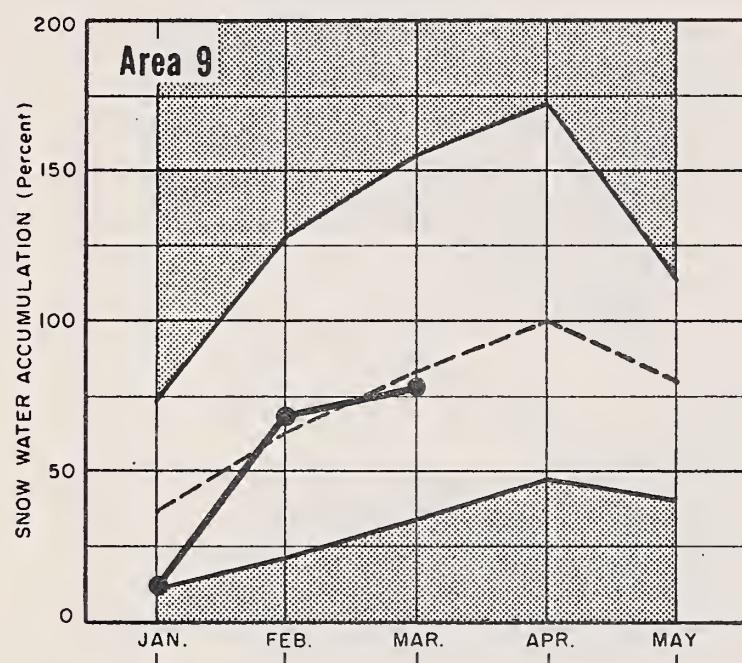
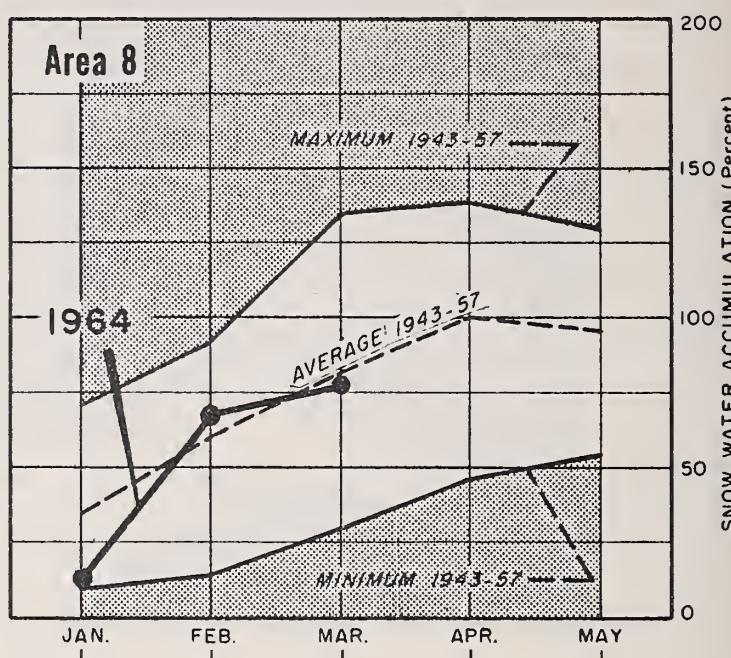
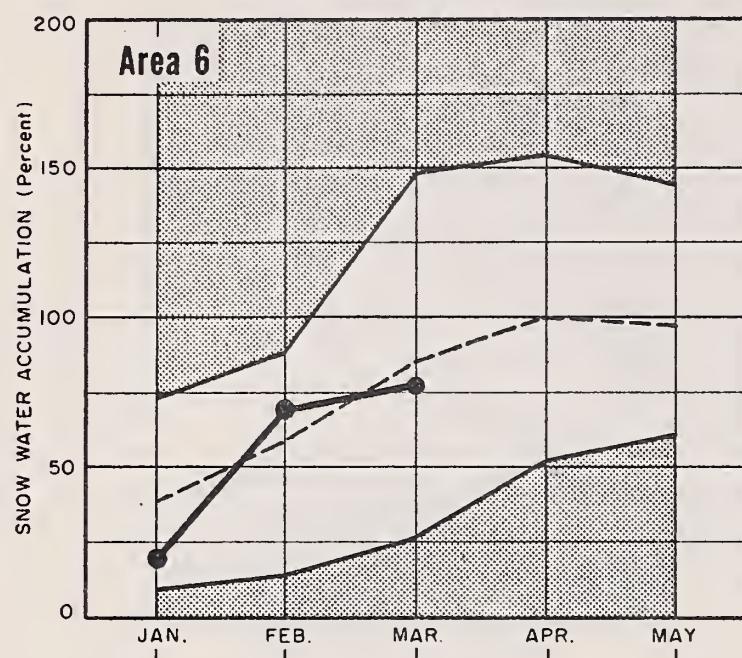
- AREA 1 - DRYHEE, MALHEUR WATERSHEDS
- AREA 2 - BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
- AREA 3 - UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
- AREA 4 - UPPER JOHN DAY WATERSHEDS
- AREA 5 - UPPER DESCHUTES, CROOKED, WATERSHEDS
- AREA 6 - HODO, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
- AREA 7 - LOWER COLUMBIA WATERSHEDS
- AREA 8 - WILLAMETTE WATERSHEDS
- AREA 9 - ROGUE, UMPQUA WATERSHEDS
- AREA 10 - KLAMATH WATERSHEDS
- AREA 11 - LAKE COUNTY, GOOSE LAKE WATERSHEDS
- AREA 12 - HARNEY BASIN WATERSHEDS



SNOW WATER ACCUMULATION in OREGON

(Percent of average maximum accumulation)

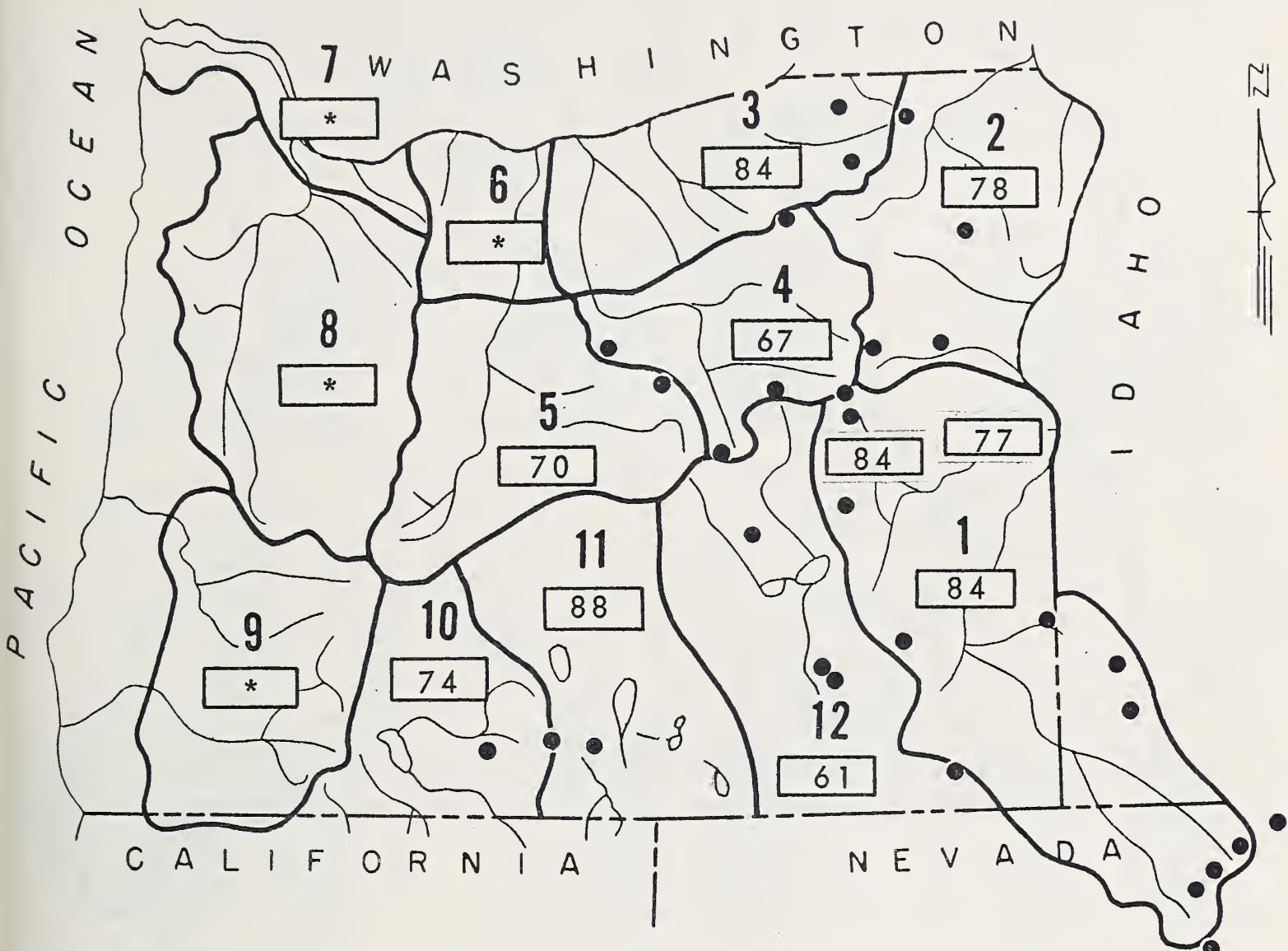
MARCH 1, 1964



MOUNTAIN SOIL MOISTURE in OREGON as percent of capacity

MARCH 1, 1964

7

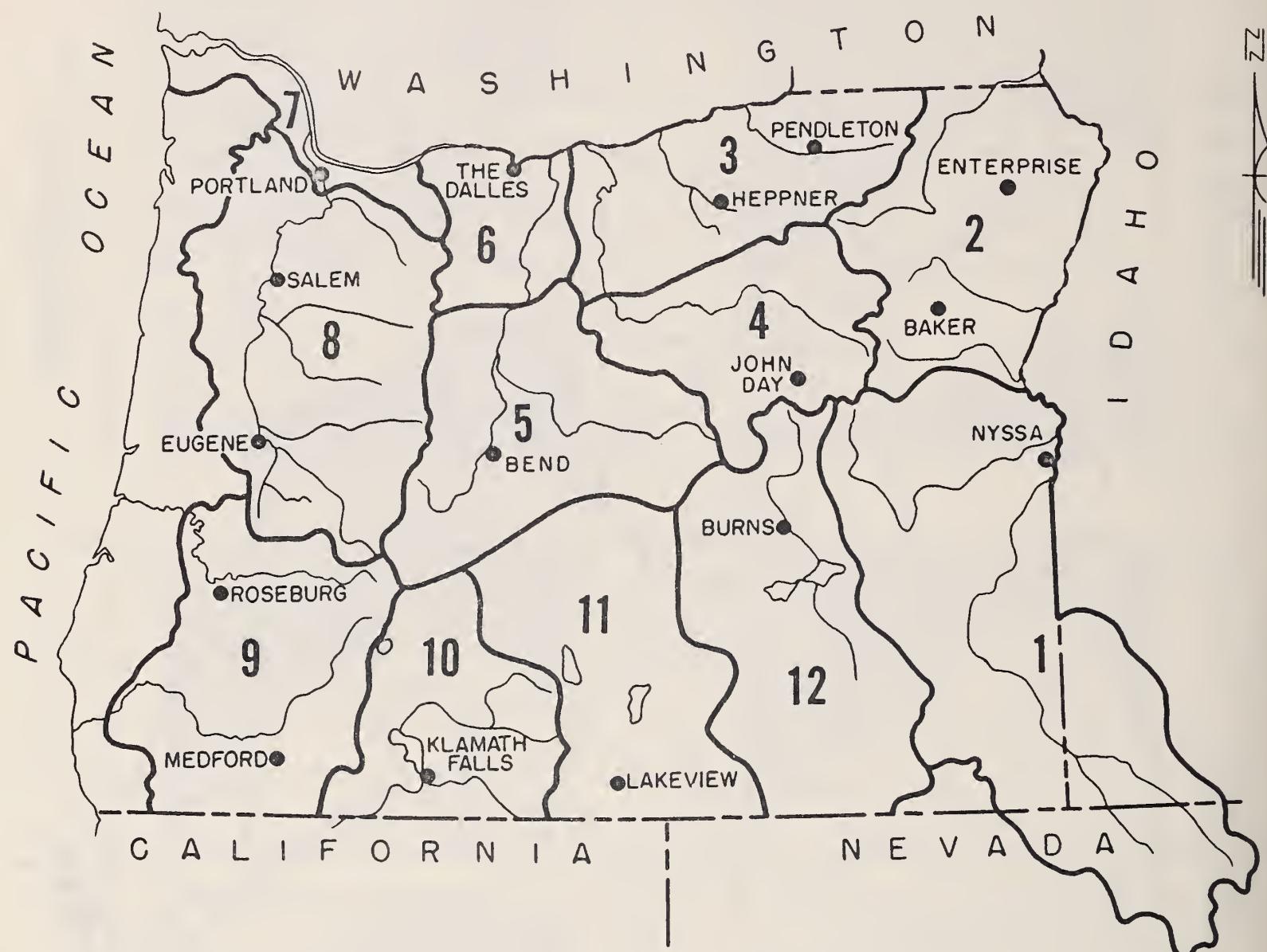


● Soil Moisture Station

*Moisture studies not yet developed in these areas.

VALLEY PRECIPITATION in OREGON ^a

MARCH 1, 1964



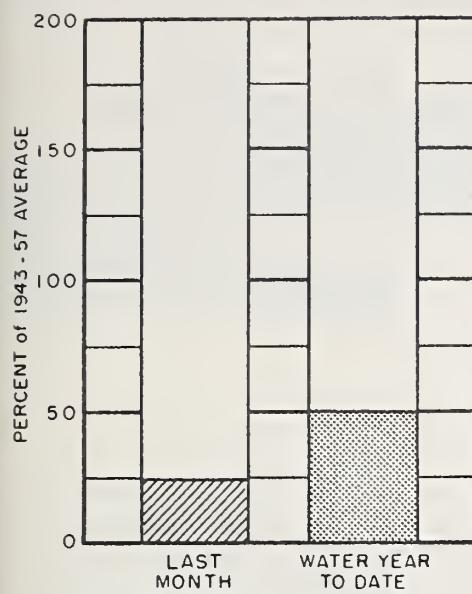
PRECIPITATION as PERCENT of the 1943-57 AVERAGE

| STATION | LAST MONTH | WATER YEAR TO DATE | STATION | LAST MONTH | WATER YEAR TO DATE |
|--------------------|---------------|--------------------------|----------------|---------------|--------------------------|
| BAKER KBKR | 57 | 98 | LAKEVIEW | 7 | 107 |
| BEND | 11 | 63 | MEDFORD APT. | 10 | 95 |
| BURNS | 24 | 85 | NYSSA | 12 | 104 |
| ENTERPRISE | 45 | 67 | PENDLETON APT. | 7 | 71 |
| EUGENE APT | 18 | 99 | PORTLAND APT. | 18 | 86 |
| HEPPNER | 50 | 77 | ROSEBURG APT. | 27 | 91 |
| JOHN DAY | 20 | 83 | SALEM APT. | 14 | 86 |
| KLAMATH FALLS APT. | 11 | 86 | THE DALLES | 5 | 72 |

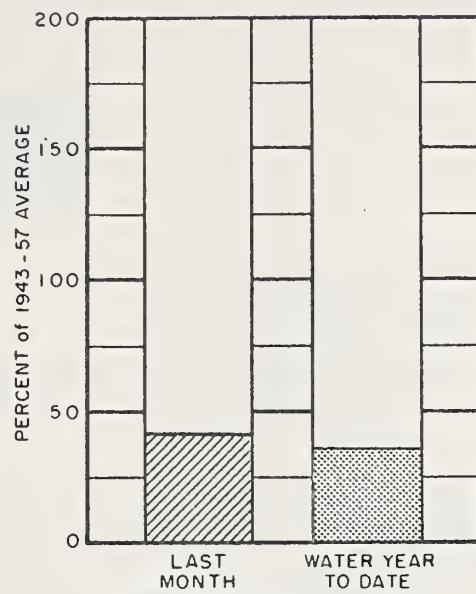
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

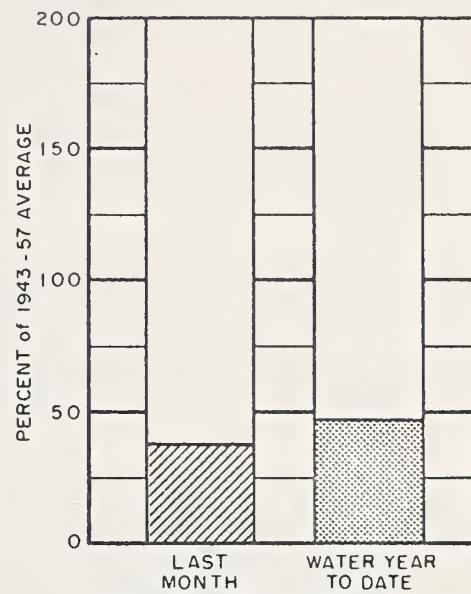
MARCH 1, 1964



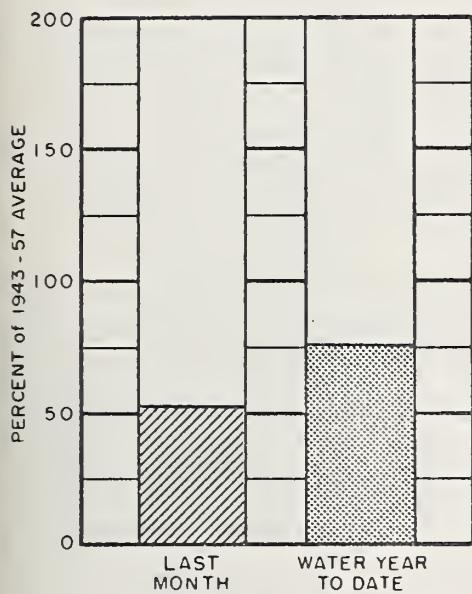
Owyhee Lake net inflow



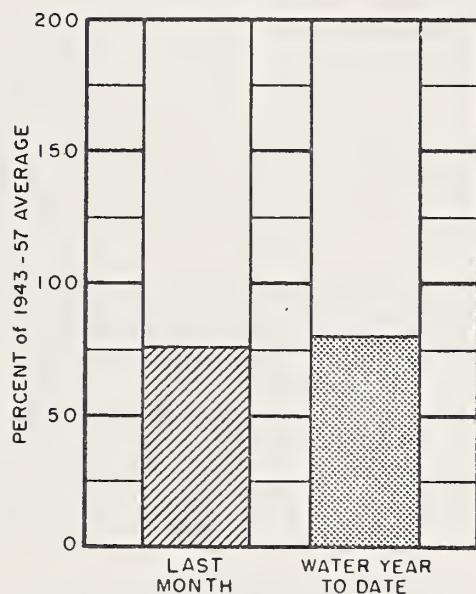
Umatilla near Umatilla



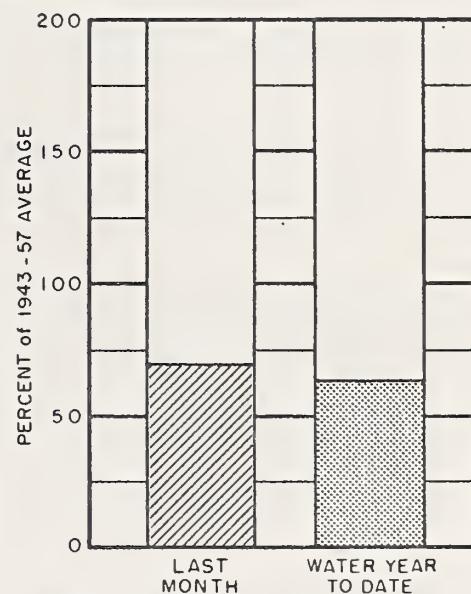
John Day at Service Creek



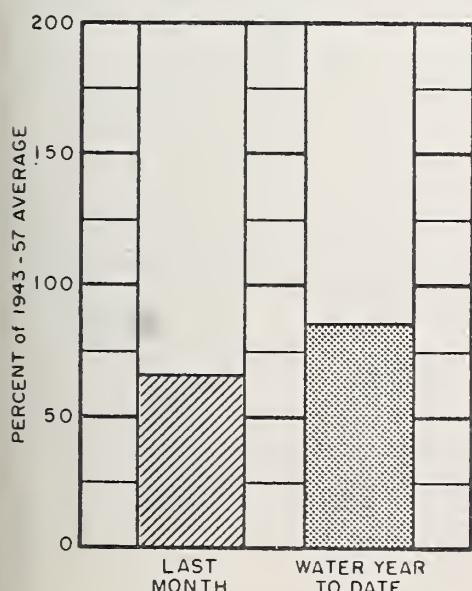
Deschutes at Moody



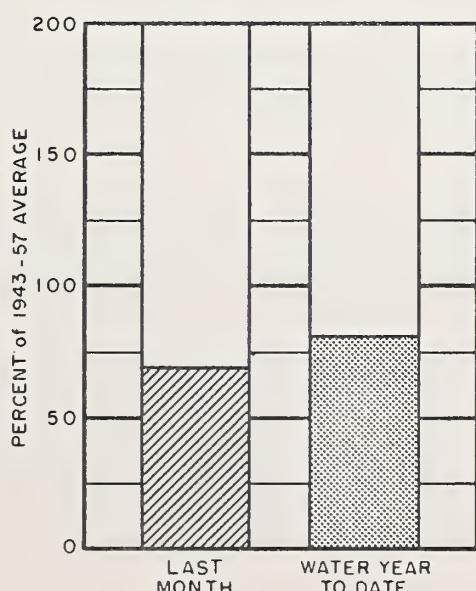
Hood and conduit near Hood River



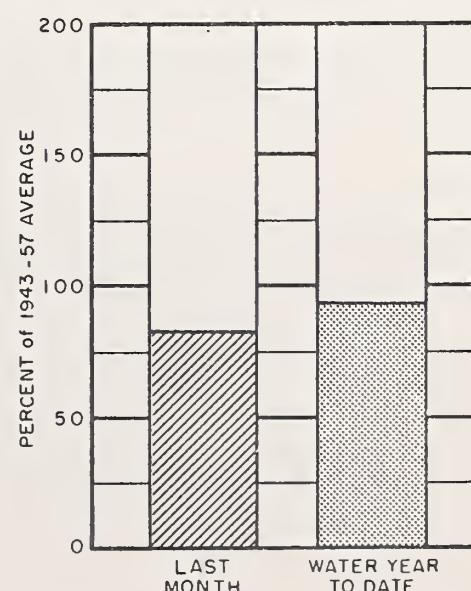
Mid. Fk. Willamette below No. Fk.



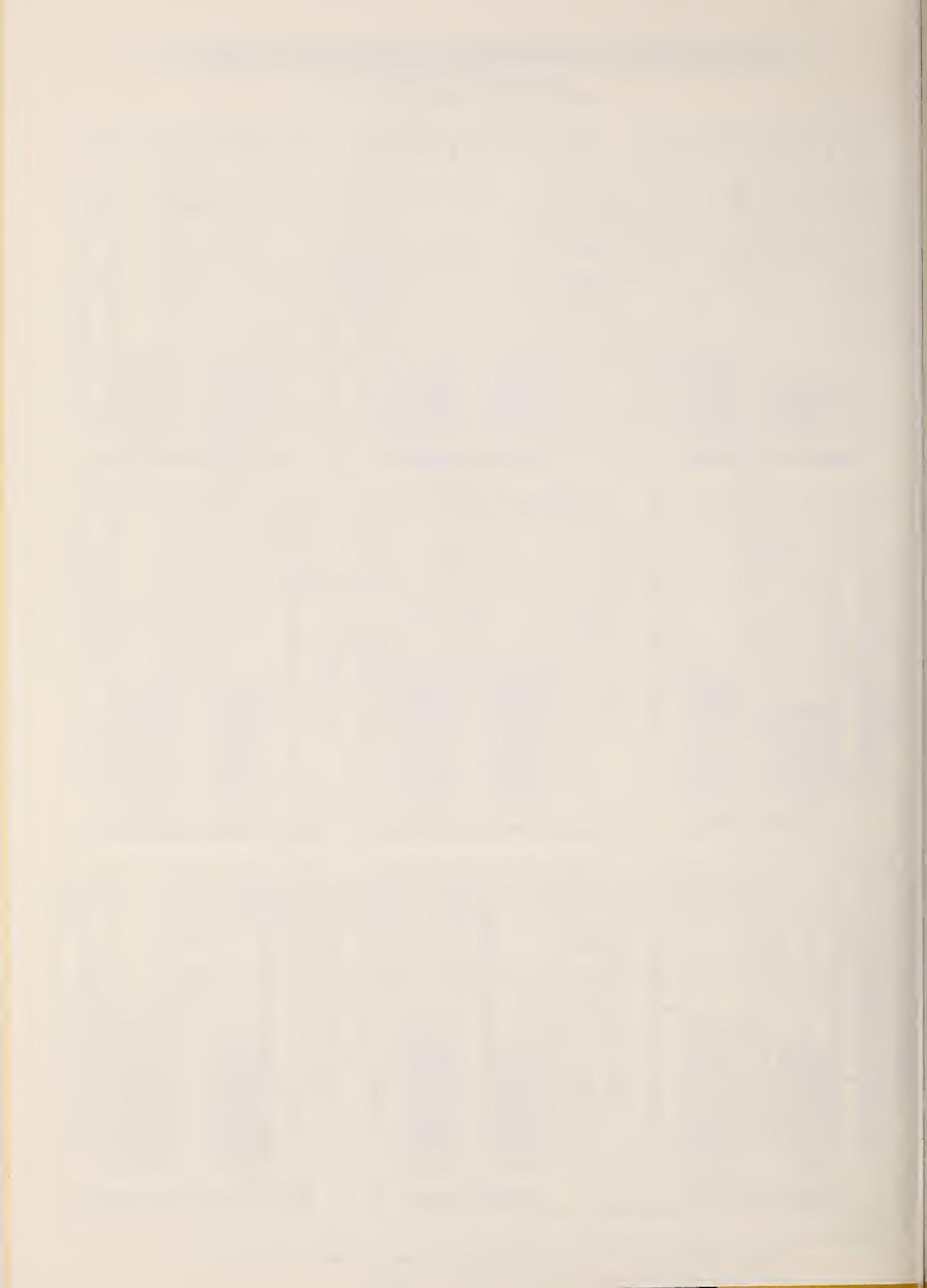
Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow





WATER SUPPLY OUTLOOK OWYHEE, MALHEUR WATERSHEDS OREGON

as of
MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The satisfactory outlook for 1964 irrigation water supplies in Malheur County, foreseen one month ago, has been "dimmed" slightly by clear, cold February weather which brought nearly record-low precipitation and greatly reduced streamflow. Inflow to the counties' all-important storage reservoirs has fallen off to a mere trickle in many cases with streams thawing slightly at mid-day but freezing up every night.

SNOW COVER - Water content of the mountain snowpack increased very slightly during the past month and is now 88 percent of the March first average. One year ago the snow was only 18 percent of this average.

Aerial flights verify that the 6" to 24" blanket of snow reported last month is still present on hundreds of square miles of the broad plateau region of the Owyhee. Thawing weather coupled with warm rains could easily produce substantial runoff into Lake Owyhee.

SOIL MOISTURE - The soil mantle under the snowpack is well re-charged by fall rains and now averages 77 percent of capacity on the Malheur and 84 percent of capacity on the Owyhee watersheds. This will favor a satisfactory runoff from melting snow.

RESERVOIR STORAGE - As of March 1 Warm Springs Reservoir held 60,620 acre feet; Agency Valley held 26,120 a.f. and Bully Creek, 6,450 acre feet for a total of 93,190 acre feet stored for the Vale-Oregon and the Warm Springs Irrigation Districts. A year ago this figure was about 110,000 acre feet. This supply is satisfactory for 1964 when combined with forecasted flow of streams yet to come.

Lake Owyhee held 303,250 acre feet on March 1 compared with 342,200 acre feet a year ago. Coupled with expected streamflow this will be an adequate supply for the season although this reservoir was designed to hold a two year supply and has not been filled since 1958.

Antelope Reservoir now holds only 4,540 acre feet compared with 10,800 a.f. one year ago. Jordan Valley Irrigation District has been hampered in filling this reservoir by the continuous cool weather which has greatly reduced the water flowing from the mountains.

STREAMFLOW - Forecasts of flow of Malheur County streams have dropped off from 15 to 20 percent but remain in the range of 80 to 90 percent of average. Flow of the Malheur near Drewsey is forecast at 83 percent for the March-July period while the North Fork at Beulah is expected to produce 90 percent of average in the same period.

Inflow to Lake Owyhee is forecast at 94 percent of average during March-July with a possibility that the reservoir will fill.

Flow of smaller streams heading in low-elevation watersheds will be near average following a normal snowmelt peak.

Report prepared by

W. T. FROST AND ROB L. WHALEY

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|----------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Boulder Creek | Average | Average |
| Bully Creek | Average | Average |
| Cow Creek | Average | Average |
| Jordan Creek | Average | Average |
| Jordan Valley Irrig. Dist. | Average | Average |
| McDermitt Creek | Average | Average |
| Oregon Canyon Creek | Average | Average |
| Owyhee Project | Average | Average |
| Succor Creek | Average | Average |
| Tenmile Creek | Average | Average |
| Vale Oregon Irrig. Dist. | Average | Average |
| Warmsprings Irrig. Dist. | Average | Average |
| Willow Creek (Reservoired) | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|---------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Agency Valley | 60.0 | 26.1 | 35.6 | 33.6 |
| Antelope | 55.0 | 4.5 | 10.8 | 10.1 |
| Bully Creek | 31.0 | 6.4 | -- | -- |
| Owyhee | 715.0 | 303.2 | 342.2 | 473.1 |
| Warmsprings | 191.0 | 60.6 | 71.9 | 83.0 |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| FORECAST POINT | | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|----------------|--|-----------------------|-----------------|--------------------|--|
| NO. | NAME | | | | |
| 2140 | Malheur near Drewsey | 65 | April-Sept. | 81 | 80 |
| | | 90 | March-July | 108 | 83 |
| 2175 | Malheur, North Fork at Beulah ^d | 66 | March-July | 73 | 90 |
| | | 55 | April-Sept. | 64 | 86 |
| 1825 | Owyhee Reservoir net Inflow ^k | 385 | April-Sept. | 430 | 90 |
| | | 495 | March-July | 524 | 94 |

SOIL MOISTURE

| STATION | PROFILE (Inches) | | SOIL MOISTURE (Inches) | | |
|--------------------------|------------------|----------|------------------------|-----------|-------------------|
| | DEPTH | CAPACITY | DATE | THIS YEAR | LAST YEAR |
| NAME | ELEVATION | | | | 2 YEARS AGO |
| Bear Creek (Nev.) | 7800 | 72 | 16.9 | b | |
| Big Bend (Nev.) | 6700 | 48 | 16.7 | 2/26/64 | 15.7 |
| Blue Mountain Springs | 5900 | 42 | 16.9 | 2/27/64 | 7.4 |
| Crane Prairie | 5375 | 48 | 18.2 | 2/26/64 | 14.7 |
| Folly Farm | 4450 | 30 | 12.5 | 12/19/63 | 8.3 ^f |
| Jack Creek, Lower (Nev.) | 6800 | 48 | 8.7 | 1/2/64 | 8.0 ^f |
| Jordan Valley | 4250 | 48 | 19.3 | 12/19/63 | 14.6 ^f |
| Mud Flat (Ida.) | 5500 | 48 | 12.8 | 2/26/64 | 9.4 |
| Rodeo Flat (Nev.) | 6800 | 42 | 11.0 | 1/28/64 | 10.4 ^f |
| Stinking Water Summit | 4800 | 48 | 21.9 | 12/19/63 | 20.8 ^f |
| Taylor Canyon (Nev.) | 6200 | 48 | 15.1 | 1/27/64 | 12.6 ^f |
| Triangle (Ida.) | 5150 | 48 | 16.2 | 2/26/64 | 11.5 |

SNOW

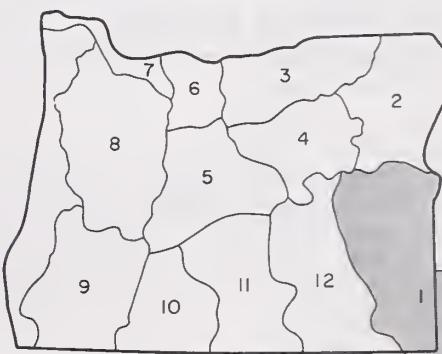
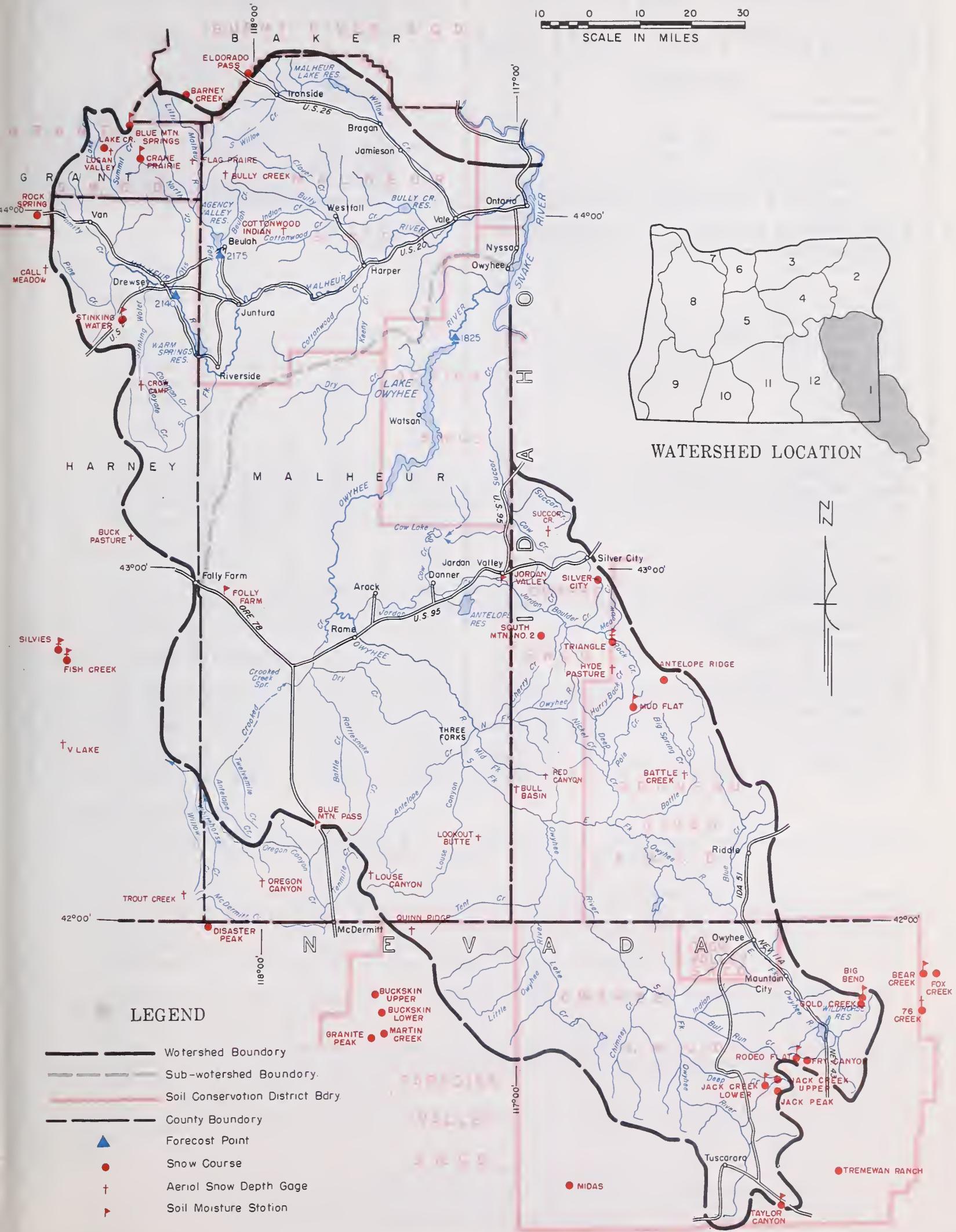
| SNOW COURSE | CURRENT INFORMATION | | | PAST RECORD | |
|----------------------------------|---------------------|---------------------|------------------------|------------------------|-----------------|
| | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) | LAST YEAR |
| NAME | ELEVATION | | | | 1943-57 AVERAGE |
| Antelope Ridge (Ida.) | 5900 | 2/26 | 27 | 8.5 | 0.0 |
| Barney Creek | 5950 | 2/27 | 22 | 6.8 | 0.8 |
| Battle Creek ^e (Ida.) | 5700 | 2/27 | 25 | 6.8 | 0.2 |
| Bear Creek (Nev.) | 7800 | 2/27 | .51 | 12.8 | 9.4 |
| Big Bend (Nev.) | 6700 | 2/26 | 30 | 8.5 | 0.6 |
| Blue Mountain Springs | 5900 | 2/26 | 40 | 12.9 | 6.9 |

Continued

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (l) Ground measurement

OWYHEE, MALHEUR WATERSHEDS

10 0 10 20 30
SCALE IN MILES



WATERSHED LOCATION

N

Owyhee, Malheur Watersheds

SNOW

| SNOW COURSE | | CURRENT INFORMATION | | | PAST RECORD | |
|------------------------------------|-----------|---------------------|---------------------|------------------------|------------------------|-------------------|
| | | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) | LAST YEAR |
| NAME | ELEVATION | | | | | 1943-57 AVERAGE |
| Buck Pasture ^e | 5700 | 2/27 | 18 | 6.1 | 0.3 | — |
| Buckskin, Lower (Nev.) | 6700 | 2/25 | 25 | 6.9 | T | 8.4 ^h |
| Buckskin, Upper (Nev.) | 7200 | 2/25 | 19 | 5.5 | 2.4 | 7.9 ^h |
| Bull Basin ^e (Ida.) | 5600 | 2/27 | 6 | 1.6 | 0.2 | — |
| Bully Creek ^e | 5300 | 2/27 | 12 | 3.5 | 0.0 | — |
| Call Meadow ^e | 5340 | 2/27 | 12 | 3.5 | 0.0 | — |
| Columbia Basin ^e (Nev.) | 6650 | b | | | | |
| Cottonwood-Indian ^e | 4320 | 2/27 | 3 | 0.9 | 0.0 | — |
| Crane Prairie | 5375 | 2/26 | 32 | 9.0 | 0.0 | 9.6 |
| Crow Camp ^e | 5500 | 2/27 | 10 | 2.9 | 0.3 | — |
| Disaster Peak (Nev.) | 6500 | 3/2 | 38 | 13.1 | 0.0 | 14.5 ^h |
| Eldorado Pass | 4600 | 2/27 | 17 | 4.9 | 0.0 | — |
| Fish Creek | 7900 | 2/26 | 65 | 21.5 | 14.3 | — |
| Flag Prairie ^e | 4750 | 2/27 | 24 | 7.0 | 0.0 | — |
| Fox Creek (Nev.) | 6800 | 2/27 | 35 | 10.2 | 2.0 | 8.4 ^h |
| Fry Canyon (Nev.) | 6700 | 2/26 | 25 | 6.0 | 0.0 | 8.2 |
| Gold Creek (Nev.) | 6600 | 2/26 | 27 | 7.8 | 0.0 | 6.3 ^h |
| Granite Peak (Nev.) | 7800 | 2/26 | 24 | 7.2 | 8.4 | 10.6 |
| Hyde Pasture (Ida.) | 5800 | 2/26 | 23 | 7.2 | 0.0 | — |
| Jack Creek, Lower (Nev.) | 6800 | b | | | | |
| Jack Creek, Upper (Nev.) | 7250 | b | | | | |
| Jacks Peak (Nev.) | 8420 | b | | | | |
| Lake Creek | 5120 | 2/26 | 33 | 9.7 | 2.8 ^l | 10.7 |
| Logan Valley ^e | 5100 | 2/27 | 27 | 7.8 | 0.0 | — |
| Lookout Butte ^e | 5650 | 2/27 | 0 | 0.0 | 0.2 | — |
| Louse Canyon ^e | 6440 | 2/27 | 5 | 1.5 | 0.0 | — |
| Martin Creek (Nev.) | 6700 | 2/25 | 25 | 6.6 | T | 8.2 |
| Midas (Nev.) | 7200 | b | | | | |
| Mud Flat (Ida.) | 5500 | 2/26 | 27 | 7.3 | 0.0 | — |
| Oregon Canyon ^e | 6950 | 2/27 | 20 | 6.0 | 0.9 | — |
| Quinn Ridge ^e (Nev.) | 6300 | 2/27 | 7 | 2.1 | 0.0 | — |
| Red Canyon ^e (Ida.) | 6500 | 2/27 | 27 | 7.3 | 0.6 | — |
| Rock Spring | 5100 | 2/27 | 20 | 4.9 | 0.1 | 5.9 |
| Rodeo Flat (Nev.) | 6800 | 2/26 | 22 | 5.7 | T | 8.2 |
| 76 Creek (Nev.) | 7100 | b | | | | |
| Silver City (Ida.) | 6400 | 3/1 | 49 | 14.1 | 1.4 | 14.8 ^h |
| Silvies | 6900 | 2/26 | 33 | 11.2 | 2.0 | — |
| South Mountain #2 (Ida.) | 6340 | 2/26 | 36 | 12.0 | 1.6 | 11.4 |
| Stag Mountain ^e (Nev.) | 7700 | b | | | | |
| Stinking Water | 4800 | 2/26 | 16 | 4.1 | 0.0 | 4.0 ^h |
| Succor Creek ^e (Ida.) | 6100 | 2/27 | 27 | 7.8 | 0.4 | — |
| Taylor Canyon (Nev.) | 6200 | 2/27 | 18 | 4.6 | 0.0 | 5.0 |
| Toe Jam ^e (Nev.) | 7700 | b | | | | |
| Tremewan Ranch (Nev.) | 5700 | 2/27 | 11 | 3.2 | 0.0 | 1.9 |
| Triangle (Ida.) | 5150 | 2/26 | 8 | 2.8 | 0.1 | — |
| Trout Creek ^e | 7800 | 2/27 | 18 | 5.4 | 3.6 | — |
| "V" Lake ^e | 6600 | 2/27 | 12 | 4.1 | 0.8 | — |



WATER SUPPLY OUTLOOK BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The satisfactory outlook for 1964 irrigation water supplies in Baker, Union and Wallowa counties, foreseen one month ago, has been "dimmed" slightly by clear, cold February weather which brought near record-low precipitation and reduced streamflow. Inflow to reservoirs was exceptionally low but total stored water is satisfactory.

SNOW COVER

Water content of the mountain snowpack increased at a below average rate but is now 90 percent of average on the Grande Ronde, 82 percent of average on the Powder River and 92 percent on the Burnt River. Water content of the snow one year ago on March 1 was about 36 percent average.

SOIL MOISTURE

Moisture in the soil mantle under the snowpack is now up to 78 percent of capacity and indicates that these soils will still absorb some snowmelt water at the time of spring runoff.

RESERVOIR STORAGE

Inflow to reservoirs has definitely been limited because of "short" precipitation. Wallowa Lake now holds 22,190 acre feet compared with 24,600 a year ago. The average figure for March 1 storage is 16,100 acre feet.

Unity Reservoir contains 11,030 acre feet which is better than the 9,100 a. f. average but short of the 19,600 acre feet held at this time last year.

STREAMFLOW

Forecasts have dropped from 4 to 16 percent from the estimates of last month but are still up in the range of 82 to 93 percent of average.

Flow of the Grande Ronde is forecast at 200,000 acre feet or 82 percent average in the March-September period. Catherine Creek, a southern tributary, is forecast at 93 percent or 68,000 acre feet April through September. Bear Creek, Lostine River, Hurricane Creek and East Fork of Wallowa River are forecast at 84, 84, 85 and 90 percent respectively in the irrigation season.

Imnaha River is forecast to flow 270,000 acre feet or 86 percent average in the April-September period.

Powder River near Baker is forecast to flow 57,000 acre feet or 86 percent average April through September. Burnt River should flow 40,000 acre feet or 89 percent average in the same period.

Flow of most small streams heading in low-elevation watersheds will be near average.

Report prepared by

W. T. FROST AND BOB L. WHALEY

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S. W. FIFTH AVENUE • PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|-----------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Alder Slope | Average | Average |
| Baker Valley | Average | Average |
| Big Creek | Average | Average |
| Clover Cr. (nr. No. Powder) | Average | Average |
| Cove | Average | Average |
| Durkee | Average | Average |
| Eagle Valley | Average | Average |
| Elgin | Average | Average |
| Enterprise-Joseph | Average | Average |
| Hereford-Bridgeport | Average | Average |
| Imnaha River | Average | Average |
| LaGrande-Island City | Average | Average |
| Lostine-Wallowa | Average | Average |
| No. Powder River-Wolf Cr. | Average | Average |
| Pine Valley | Average | Average |
| Powder River-Elk Creek | Average | Average |
| Summerville | Average | Average |
| Sumpter Valley | Average | Average |
| Union-Hot Lake | Average | Average |
| Unity | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.)

March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|--------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Unity | 25.2 | 11.0 | 19.6 | 9.1 |
| Wallowa Lake | 37.5 | 22.2 | 24.6 | 16.1 |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

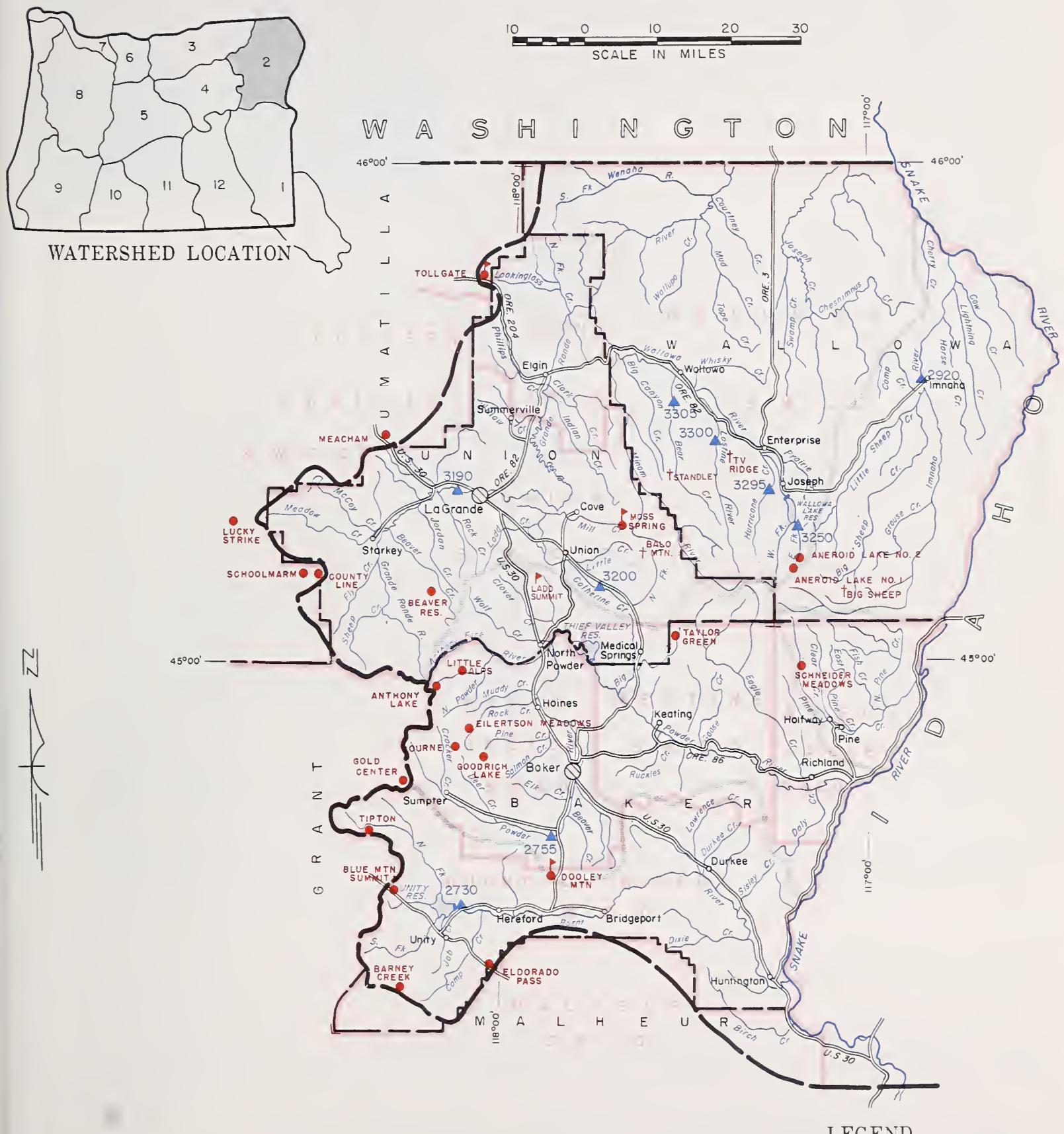
| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | | THIS YEAR AS PERCENT OF AVERAGE |
|------|---|-----------------------|-----------------|--------------------|---------------------------------------|---------------------------------------|
| | | | | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE | |
| 3305 | Bear near Wallowa | 62 | April-Sept. | 74 | 84 | |
| 2730 | Burnt near Hereford ^d | 40 | April-Sept. | 45 | 89 | |
| | | 46 | March-June | 51 | 90 | |
| 3200 | Catherine near Union | 68 | April-Sept. | 73 | 93 | |
| 3190 | Grande Ronde at LaGrande | 200 | March-Sept. | 245 | 82 | |
| 3295 | Hurricane near Joseph | 42 | April-Sept. | 49 | 85 | |
| 2920 | Imnaha at Imnaha | 270 | April-Sept. | 314 | 86 | |
| 3300 | Lostine near Lostine | 112 | April-Sept. | 133 | 84 | |
| 2755 | Powder near Baker | 57 | April-Sept. | 66 | 86 | |
| | | 56 | April-July | 65 | 86 | |
| 3250 | Wallowa, East Fork near Joseph ^d | 11.5 | March-Sept. | 12.8 | 90 | |
| | | 9.4 | March-July | 10.4 | 90 | |

SOIL MOISTURE

| STATION | PROFILE (Inches) | | SOIL MOISTURE (Inches) | | | |
|----------------------|------------------|----------|------------------------|-----------|-----------|-------------|
| | DEPTH | CAPACITY | DATE | THIS YEAR | LAST YEAR | 2 YEARS AGO |
| NAME | ELEVATION | | | | | |
| Blue Mountain Summit | 5100 | 36 | 16.8 | 2-28-64 | 9.6 | 13.0 |
| Emigrant Springs | 3925 | 48 | 22.3 | 2-24-64 | 20.3 | 20.7 |
| Tollgate | 5070 | 48 | 23.6 | 2-26-64 | 19.2 | 21.4 |

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



LEGEND

— Watershed Boundary

— Sub-watershed Boundary

— Soil Conservation District Boundary

— County Boundary

▲ Forecast Point

● Snow Course

▼ Soil Moisture Station

✚ Aerial Snow Depth Gage

SNOW

| SNOW COURSE | | CURRENT INFORMATION | | | PAST RECORD | |
|-----------------------------------|-----------|---------------------|---------------------|------------------------|------------------------|-------------------|
| | | DATE OF SURVEY | SNOW DEPTH (inches) | WATER CONTENT (inches) | WATER CONTENT (inches) | LAST YEAR |
| NAME | ELEVATION | | | | | 1943-57 AVERAGE |
| Aneroid Lake #1 | 7480 | 2/29 | 73 | 25.5 | 21.0 | 33.4 ^h |
| Aneroid Lake #2 | 7000 | 2/29 | 62 | 21.8 | 14.7 | 26.2 ^h |
| Anthony Lake | 7125 | 2/27 | 71 | 22.1 | 11.3 | 25.2 ^h |
| Bald Mountain ^e (Ore.) | 6700 | 2/27 | 74 | 23.7 | 9.4 | — [—] |
| Barney Creek | 5950 | 2/27 | 22 | 6.8 | 0.8 | 7.7 ^h |
| Beaver Reservoir | 5340 | 2/25 | 36 | 9.9 | 4.2 | 10.6 |
| Big Sheep ^e | 6200 | 2/24 | 72 | 24.5 | 6.0 | — [—] |
| Blue Mountain Summit | 5098 | 2/28 | 30 | 8.8 | 1.8 | 8.8 |
| Bourne | 5800 | 2/25 | 42 | 12.2 | 5.5 | 16.5 ^h |
| County Line | 4800 | 2/28 | 22 | 6.0 | 0.0 | 7.6 ^h |
| Dooley Mountain | 5430 | 2/27 | 28 | 8.1 | 0.5 | 8.8 |
| Eilertson Meadows | 5400 | 2/23 | 34 | 9.8 | 0.0 | 11.1 ^h |
| Eldorado Pass | 4600 | 2/27 | 17 | 4.9 | 0.0 | — [—] |
| Gold Center | 5340 | 2/25 | 36 | 10.5 | 4.1 | 12.8 ^h |
| Goodrich Lake ^e | 6775 | 2/25 | 77 | 22.3 | 16.4 | 32.1 ^h |
| Little Alps | 6200 | 2/27 | 39 | 10.7 | 3.0 | — [—] |
| Lucky Strike | 5050 | 2/25 | 39 | 10.6 | 5.4 | 12.3 |
| Meacham | 4300 | 2/24 | 43 | 11.7 | 0.0 | 9.9 |
| Mirror Lake ^e | 8200 | 2/24 | 167 | 56.8 | 44.8 | — [—] |
| Moss Spring | 5850 | 2/26 | 63 | 19.9 | 4.7 | 22.4 |
| Schneider Meadows | 5400 | 2/27 | 70 | 25.3 | 15.1 | 29.5 ^h |
| Schoolmarm | 4775 | 2/28 | 22 | 5.8 | 0.0 | 6.4 ^h |
| Standley ^e | 7400 | 2/24 | 88 | 28.2 | 11.6 | — [—] |
| Taylor Green | 5740 | 2/24 | 39 | 11.8 | 3.8 | — [—] |
| Tipton | 5100 | 2/28 | 33 | 10.8 | 2.5 | 11.0 ^h |
| Tollgate | 5070 | 2/26 | 84 | 29.1 | 5.9 | 26.7 |
| TV Ridge ^e | 5670 | 2/24 | 7 | 2.2 | 0.0 | — [—] |



Area 3

WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

OREGON

as of

MARCH 1, 1964

**U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER**

GENERAL OUTLOOK

The satisfactory outlook for 1964 irrigation water supplies in the Umatilla-Walla Walla watersheds, foreseen one month ago, has been "dimmed" slightly by clear, cold February weather which brought near record-low precipitation and greatly reduced streamflow. Inflow to the areas' all-important storage reservoirs has been very inadequate.

SNOW COVER

Water content of the mountain snowpack increased slightly during the month and is now 105 percent of the 15 year average for March first. Percentage-wise this is the best snowpack in the state.

SOIL MOISTURE

The soil mantle under the snowpack is well re-charged and averages 84 percent of capacity. These moist soils will favor a satisfactory snowmelt runoff next spring.

RESERVOIR STORAGE

Cold Springs Reservoir is now full at 50,000 acre feet compared with 43,900 a.f. one year ago at this date. The average is 38,600 acre feet.

McKay Reservoir holds 16,000 acre feet compared with 31,200 a.f. one year ago and an average storage of 44,100 on March first. With reasonable runoff conditions this storage figure will "top out" at about 45,000 acre feet -- a limited supply for the 1964 irrigation season.

STREAMFLOW

Forecasts of streamflow have dropped off slightly since last month but remain in the 90 to 99 percent of average range.

Flow of the South Fork of the Walla Walla is forecast at 74,000 acre feet or 99 percent average for the March-July period. This stream should furnish about average water supplies. Flow of Couse, Dry and Pine creeks should also be close to average.

Flow of the Umatilla at Pendleton is forecast at 96 percent average in the April-July period. McKay Creek should flow 41,000 acre feet or 94 percent average in the March-July period -- an insufficient amount for the seasons' needs.

Butter Creek is forecast to flow 97 percent average March through July and other similar streams should produce near average water supplies.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|---|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Birch Creek | Average | Average |
| Butter Creek | Average | Average |
| Dry Creek | Average | Average |
| Dugger Creek | Average | Average |
| Johnson Creek | Average | Average |
| McKay Creek | Average | Average |
| Mill Creek | Average | Average |
| Mud Creek | Average | Average |
| Pine Creek | Average | Average |
| Rhea Creek | Average | Average |
| Rock Creek | Average | Average |
| Umatilla River (Cold Springs Reservoir) | Average | Average |
| Umatilla River, Main | Average | Average |
| Umatilla River (McKay Res.) | Average | Fair |
| Walla Walla River, Little | Average | Average |
| Walla Walla River, Main | Average | Average |
| Walla Walla River, No. Fork | Average | Average |
| Walla Walla River, So. Fork | Average | Average |
| Willow Creek | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.)

March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|--------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Cold Springs | 50.0 | 50.0 | 43.9 | 38.6 |
| McKay | 73.8 | 16.0 | 31.2 | 44.1 |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|------|-------------------------------------|-----------------------|-----------------|--------------------|--|
| | | | | | |
| 0320 | Butter Creek near Pine City | 13.6 | March-July | 14.0 | 97 |
| 0225 | McKay near Pilot Rock | 41 | March-July | 48 | 94 |
| | | 28 | April-Sept. | 31 | 90 |
| 0200 | Umatilla near Gibbon | 90 | April-Sept. | 96 | 94 |
| 0210 | Umatilla at Pendleton | 180 | April-Sept. | 187 | 96 |
| | | 175 | April-July | 182 | 96 |
| 0100 | Walla Walla, South Fork near Milton | 87 | March-Sept. | 89 | 98 |
| | | 74 | March-July | 75 | 99 |

SOIL MOISTURE

| STATION | PROFILE (Inches) | | SOIL MOISTURE (Inches) | | |
|------------------------|------------------|----------|------------------------|-----------|-------------|
| | DEPTH | CAPACITY | DATE | THIS YEAR | LAST YEAR |
| NAME | ELEVATION | | | | 2 YEARS AGO |
| *Athena-Weston | 1700 | 48 | 18.7 | 13.3 | 16.0 |
| Battle Mountain Summit | 4340 | 48 | 13.8 | 12.7 | 13.4 |
| Emigrant Springs | 3925 | 48 | 22.3 | 20.3 | 20.7 |
| Tollgate | 5070 | 48 | 23.6 | 19.2 | 21.4 |

*Errata: Athena Weston published in error last month. Should read 13.2.

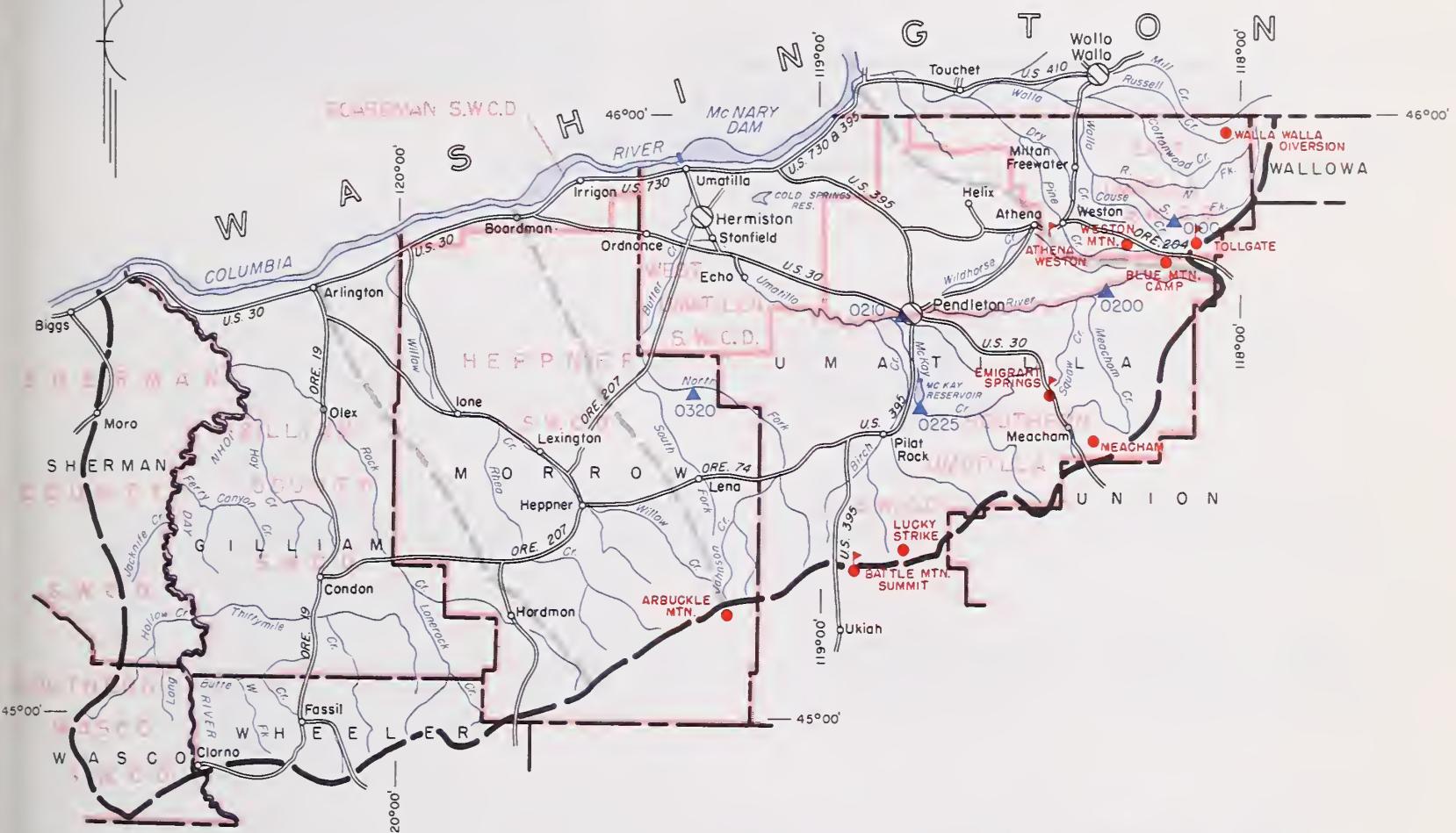
SNOW

| SNOW COURSE | CURRENT INFORMATION | | | PAST RECORD | |
|------------------------|---------------------|---------------------|------------------------|------------------------|-----|
| | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) | |
| NAME | ELEVATION | | LAST YEAR | 1943-57 AVERAGE | |
| Arbuckle Mountain | 5400 | 2/25 | 38 | 10.3 | 0.0 |
| Battle Mountain Summit | 4340 | 2/25 | 11 | 2.6 | 0.0 |
| Blue Mountain Camp | 4300 | 2/26 | 59 | 20.0 | 0.1 |
| Emigrant Springs | 3925 | 2/24 | 31 | 8.9 | 0.0 |
| Lucky Strike | 5050 | 2/25 | 39 | 10.6 | 5.4 |
| Meacham | 4300 | 2/24 | 43 | 11.7 | 0.0 |
| Tollgate | 5070 | 2/26 | 84 | 29.1 | 5.9 |
| Weston Mountain | 2700 | 2/26 | 0 | 0.0 | 0.0 |

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

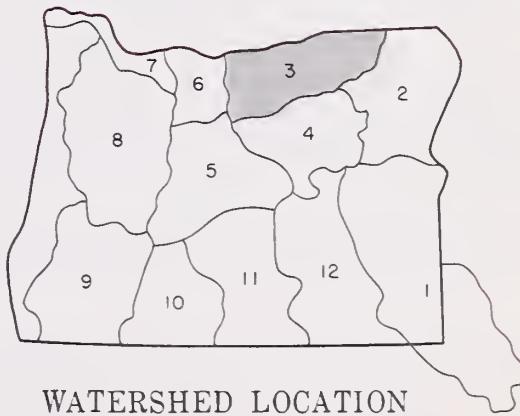
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- Soil Moisture Station



WATERSHED LOCATION

Umatilla, Walla Walla, Willow, Rock, Lower John Day Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK UPPER JOHN DAY WATERSHEDS OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The satisfactory outlook for 1964 irrigation water supplies in the Upper John Day basin, foreseen one month ago, has been "dimmed" slightly by clear, cool February weather which brought near record-low precipitation and reduced streamflow. Watershed soils are still not fully re-charged with moisture.

SNOW COVER

Water content of the mountain snowpack increased at a below average rate but is now 88 percent of the March 1 average. A year ago on this date the snowpack was only 27 percent of average.

SOIL MOISTURE

Moisture in the soil mantle under the snowpack is 67 percent of capacity. Watershed soils will therefore soak up some of the snowmelt water in the spring run-off and reduce total streamflow.

STREAMFLOW

Forecasts of streamflow in the John Day basin have dropped from 3 to 13 percent from the estimates of last month but are still up in the 84 to 92 percent range.

Flow of the Middle Fork of the John Day at Ritter is forecast at 143,000 acre feet or 90 percent average for the period March through July. Similarly, flow of the main John Day river at Prairie City is forecast at 54,000 acre feet or 92 percent for the same 5 months. Strawberry Creek near Prairie City is forecast to produce 7,600 acre feet or 84 percent of average in the six months, April through September.

Flow of smaller streams such as Indian, Pine, Mountain and Rock Creeks plus Beech, Fox, Long, Camas and Cherry Creeks is expected to be only slightly below average this year during the irrigation season.

Good water supplies seem assured for all of the John Day country if normal weather conditions prevail from now until the end of summer.

Flow of the John Day River at Service Creek* has averaged 47 percent since October 1 but only 37 percent during February.

*Preliminary data from the U. S. Geological Survey, Portland, Oregon.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|---------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Beech Creek | Average | Average |
| Beech Creek-Fox-Long Cr. | Average | Average |
| Bridge-Mountain Creeks | Average | Average |
| Camas Creek | Average | Average |
| Cherry Creek | Average | Average |
| Indian-Pine Creeks | Average | Average |
| John Day River, Main Fork | Average | Average |
| John Day River, Mid. Fork | Average | Average |
| John Day River, N. Fork | Average | Average |
| John Day River, S. Fork | Average | Average |
| Monument-Kimberly | Average | Average |
| Strawberry Creek | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|-----------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| | | | | |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| FORECAST POINT | | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|----------------|---------------------------------|-----------------------|-----------------|--------------------|--|
| NO. | NAME | | | | |
| 0385 | John Day at Prairie City | 48 | April-Sept. | 54 | 89 |
| | | 54 | March-July | 59 | 92 |
| 0440 | John Day, Middle Fork at Ritter | 120 | April-Sept. | 135 | 89 |
| | | 143 | March-July | 158 | 90 |
| 0375 | Strawberry near Prairie City | 7.6 | April-Sept. | 9.1 | 84 |

SOIL MOISTURE

| STATION | PROFILE (Inches) | | SOIL MOISTURE (Inches) | | | |
|------------------------|------------------|----------|------------------------|-----------|-----------|-------------|
| | DEPTH | CAPACITY | DATE | THIS YEAR | LAST YEAR | 2 YEARS AGO |
| NAME | ELEVATION | | | | | |
| Battle Mountain Summit | 4340 | 48 | 13.8 | 2-25-64 | 12.7 | 13.4 |
| Blue Mountain Springs | 5900 | 42 | 16.9 | 2-27-64 | 7.4 | 13.5 |
| Blue Mountain Summit | 5100 | 36 | 16.8 | 2-28-64 | 9.6 | 13.0 |
| Derr | 5670 | 24 | 9.0 | b | | 7.2 |
| Marks Creek | 4540 | 36 | 14.1 | 2-26-64 | 9.2 | 11.9 |
| Snow Mountain | 6300 | 48 | 16.7 | 2-25-64 | 12.3 | 14.8 |
| Starr Ridge | 5150 | 36 | 10.6 | 2-27-64 | 8.3 | 10.5 |

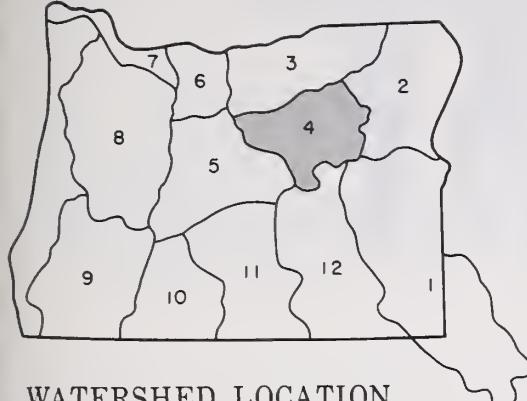
SNOW

| SNOW COURSE | CURRENT INFORMATION | | | PAST RECORD | |
|---------------------------------|---------------------|---------------------|------------------------|------------------------|-----------------|
| | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) | LAST YEAR |
| NAME | ELEVATION | | | | 1943-57 AVERAGE |
| Anthony Lake | 7125 | 2/27 | 71 | 22.1 | 11.3 |
| Arbuckle Mountain | 5400 | 2/25 | 38 | 10.3 | 0.0 |
| Battle Mountain Summit | 4340 | 2/25 | 11 | 2.6 | 0.0 |
| Beech Creek Summit | 4800 | 2/27 | 17 | 4.8 | 0.0 |
| Blue Mountain Springs | 5900 | 2/26 | 40 | 12.9 | 6.9 |
| Blue Mountain Summit | 5098 | 2/28 | 30 | 8.8 | 1.8 |
| Derr | 5670 | 2/28 | 31 | 9.4 | 0.4 |
| East Fork Canyon ^e | 5700 | 2/27 | 36 | 11.5 | T |
| Gold Center | 5340 | 2/25 | 36 | 10.5 | 4.1 |
| Indian Creek Butte ^e | 6550 | 2/27 | 60 | 19.2 | 10.8 |
| Izee Summit | 5293 | 2/27 | 27 | 7.1 | 1.1 |
| Lucky Strike | 5050 | 2/25 | 39 | 10.6 | 5.4 |
| Marks Creek | 4540 | 2/26 | 16 | 4.8 | 0.0 |
| Ochoco Meadows | 5200 | 2/27 | 29 | 8.1 | 0.0 |
| Olive Lake | 6000 | 2/26 | 53 | 16.8 | 6.9 |
| Schoolmarm | 4775 | 2/28 | 22 | 5.8 | 0.0 |
| Snow Mountain | 6300 | 2/25 | 36 | 10.5 | 5.5 |
| Starr Ridge | 5150 | 2/27 | 19 | 5.2 | 0.0 |
| Tipton | 5100 | 2/28 | 33 | 10.8 | 2.5 |
| Williams Ranch | 4500 | 2/27 | 8 | 3.5 | 0.0 |

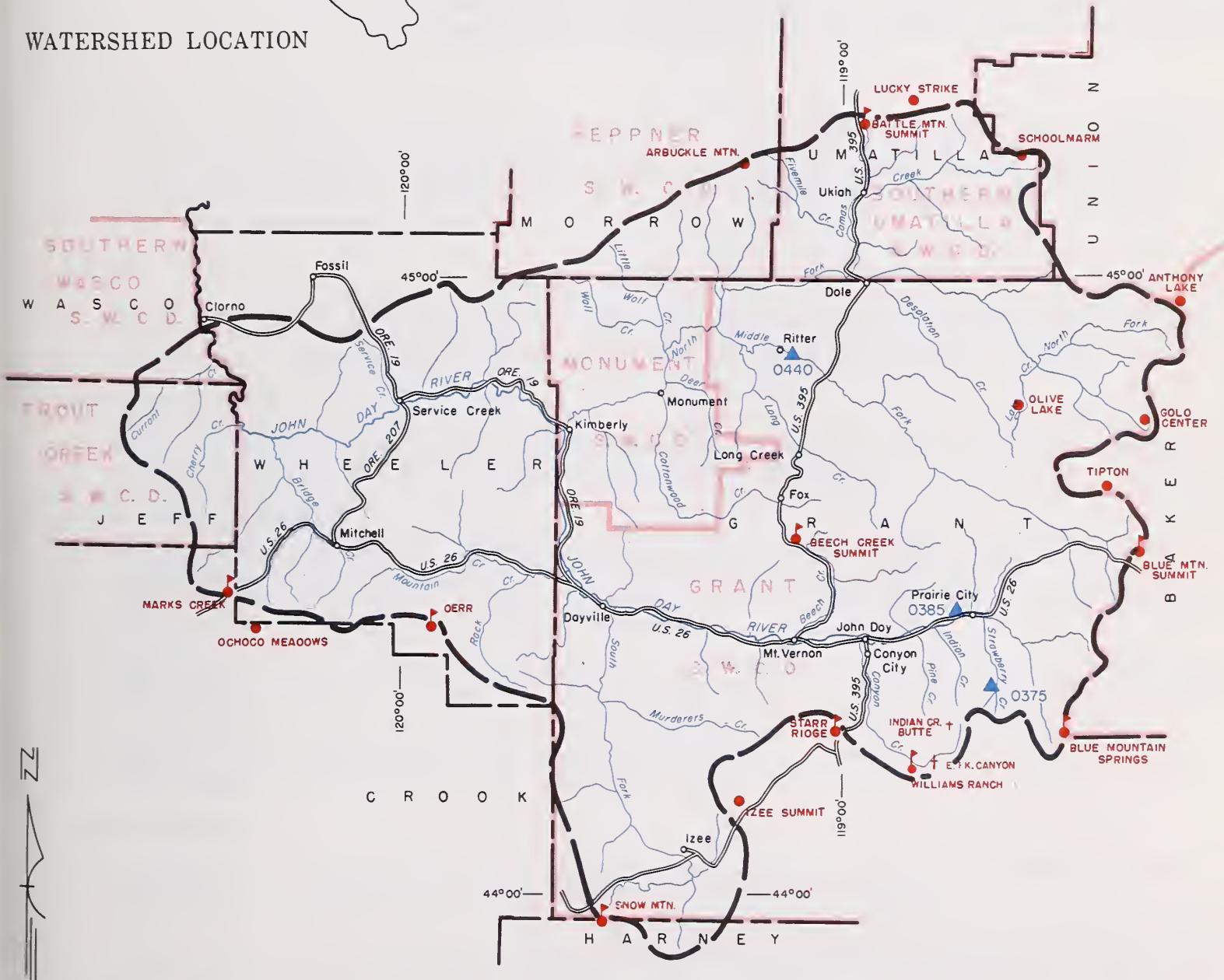
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

UPPER JOHN DAY WATERSHEDS

10 0 10 20 30
SCALE IN MILES



WATERSHED LOCATION



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- Soil Moisture Station
- † Aerial Snow Depth Gage

Upper John Day Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK UPPER DESCHUTES, CROOKED WATERSHEDS OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The satisfactory outlook for 1964 irrigation water supplies in Deschutes, Jefferson and Crook counties, foreseen one month ago, has been dimmed slightly by clear, cold February weather which brought near record-low precipitation and greatly reduced streamflow. Inflow to the areas' all-important storage reservoirs has continued at a reduced rate.

SNOW COVER

Water content of the mountain snowpack increased only slightly during the month and are now 87 percent of March 1 on Crooked watersheds and 88 percent on the Deschutes. A year ago the snow cover was less than one-fourth average.

SOIL MOISTURE

Moisture in watershed soils under the snowpack remains at 70 percent of capacity. Some snowmelt water will be absorbed as runoff begins.

RESERVOIR STORAGE

Crooked River reservoirs, Ochoco and Prineville, hold 25,280 and 97,279 acre feet respectively as of March first. This totals 122,559 a.f. which is slightly less than the 137,200 acre feet held one year ago, but still very adequate water supplies for lands served by these reservoirs.

Wickiup Reservoir holds 166,250 acre feet compared with 178,400 a.f. last year. This years' figure is well above the average March 1 storage of 133,300 acre feet.

Crane Prairie and Crescent Lake hold 40,300 acre feet and 50,776 acre feet respectively compared with 44,200 and 63,600 acre feet in storage one year ago. These stored supplies are very close to average.

STREAMFLOW

Forecasts of streamflow have dropped 8 to 15 percent from the estimates of last month but are still in the 80 to 95 percent of average range.

Flow of Crooked River is forecast at 80 percent or 144,000 acre feet March through July. For a similar period, Ochoco Creek is forecast at 82 percent or 37,000 a.f. Some small tributaries in the Crooked River watershed will have slightly reduced late season water supplies.

Squaw and Tumalo Creeks are forecast to flow 95 to 91 percent of average for the April-September period.

Flow of the Deschutes at Benham Falls is forecast at 90 percent or 345,000 acre feet April through July which should supply near average water supplies.

continued on next page

continued from preceding page

Upstream tributaries are forecast as follows for April through September:

| | | |
|--------------------------------|--------------|-----------------------|
| Little Deschutes near Lapine | 90,000 a.f. | 80 percent of average |
| Crescent Creek at Crescent Lk. | 28,000 a.f. | 90 percent of average |
| Odell Creek near Crescent | 30,000 a.f. | 88 percent of average |
| Crane Prairie Reservoir Inflow | 130,000 a.f. | 91 percent of average |
| Deschutes below Snow Creek | 65,000 a.f. | 88 percent of average |

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|----------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Arnold Irrigation District | Average | Average |
| Bear Creek | Average | Average |
| Beaver Creek | Average | Average |
| Camp Creek | Average | Average |
| Central Ore. Irrig. Dist. | Average | Average |
| Crooked River | Average | Average |
| Deschutes River | Average | Average |
| Hay-Trout Creeks | Average | Average |
| Lone Pine Irrig. Dist. | Average | Average |
| Mill Creek | Average | Average |
| North Unit Irrig. Dist. | Average | Average |
| Ochoco Creek | Average | Average |
| Sisters Irrigation Dist. | Average | Average |
| Snow Creek Irrig. Dist. | Average | Average |
| Squaw Creek Irrig. Dist. | Average | Average |
| Swalley Ditch | Excellent | Excellent |
| Tumalo Project | Average | Average |
| Walker Basin Irrig. Dist. | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.)

March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|---------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Crane Prairie | 55.3 | 40.3 | 44.2 | 44.1 |
| Crescent Lake | 117.2 | 50.8 | 63.6 | 47.3 |
| Ochoco | 47.5 | 25.3 | 37.1 | 28.5 |
| Prineville | 153.0 | 97.3 | 100.1 | -- |
| Wickiup | 182.0 | 166.3 | 178.4 | 133.3 |

Note:

Current storage figure for Crescent Lake includes 5360 acre feet of known dead and inactive storage.

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | | THIS YEAR AS PERCENT OF AVERAGE |
|------|--|-----------------------|-----------------|--------------------|----|---------------------------------------|
| | | | | 1 | 2 | |
| 0535 | Crane Prairie Reservoir total Inflow | 130 | April-Sept. | 143 | 91 | |
| 0600 | Crescent at Crescent Lake ^d | 25 | March-July | 28 | 89 | |
| | | 28 | April-Sept. | 31 | 90 | |
| 0795 | Crooked near Post | 144 | March-July | 179 | 80 | |
| | | 147 | March-Sept. | 181 | 81 | |
| 0645 | Deschutes at Benham Falls ^d | 500 | April-Sept. | 602 | 83 | |
| | | 345 | April-July | 404 | 85 | |
| 0500 | Deschutes below Snow Creek | 65 | April-Sept. | 74 | 88 | |
| 0630 | Deschutes, Little near Lapine ^d | 92 | March-July | 115 | 80 | |
| | | 90 | April-Sept. | 113 | 80 | |
| 0848 | Ochoco Reservoir net Inflow | 37 | March-July | 45 | 82 | |
| | | 26 | April-Sept. | 32 | 81 | |
| 0555 | Odell near Crescent | 30 | April-Sept. | 34 | 88 | |
| 0750 | Squaw near Sisters | 52 | April-Sept. | 55 | 95 | |
| 0730 | Tumalo near Bend ^d | 50 | April-Sept. | 55 | 91 | |

SOIL MOISTURE

| STATION | PROFILE (Inches) | | | SOIL MOISTURE (Inches) | | |
|---------------|------------------|----------|------|------------------------|-----------|-------------|
| | DEPTH | CAPACITY | DATE | THIS YEAR | LAST YEAR | 2 YEARS AGO |
| NAME | ELEVATION | | | | | |
| Derr | 5670 | 24 | 9.0 | b | | |
| Marks Creek | 4540 | 36 | 14.1 | 2-26-64 | 9.2 | 11.9 |
| Snow Mountain | 6300 | 48 | 16.7 | 2-25-64 | 12.3 | 14.8 |

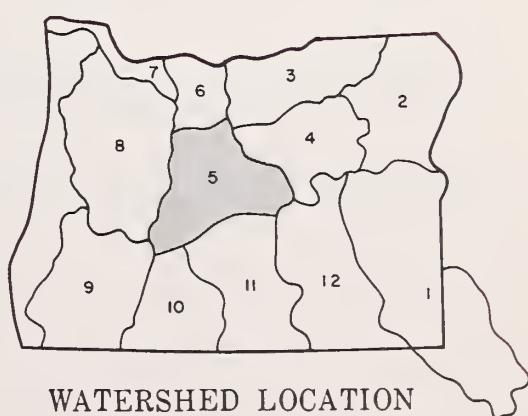
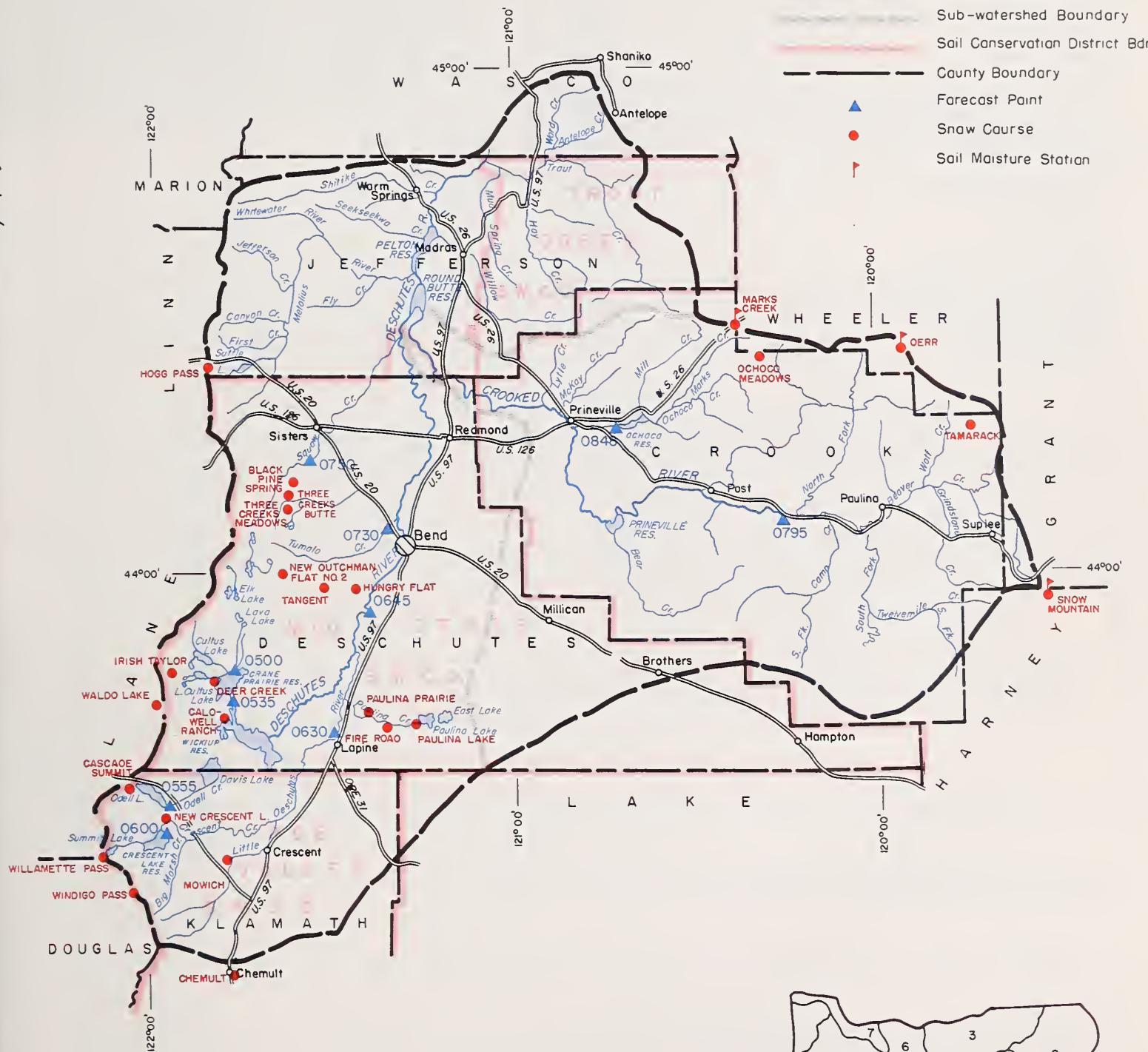
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

UPPER DESCHUTES, CROOKED WATERSHEDS

10 0 10 20 30
SCALE IN MILES

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Sail Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course
- Sail Moisture Station



WATERSHED LOCATION

Upper Deschutes, Crooked Watersheds

SNOW

| SNOW COURSE | | CURRENT INFORMATION | | | PAST RECORD | |
|----------------------|-----------|---------------------|---------------------|------------------------|------------------------|-------------------|
| | | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) | LAST YEAR |
| NAME | ELEVATION | | | | | 1943-57 AVERAGE |
| Black Pine Spring | 4600 | 2/28 | 10 | 3.4 | 0.0 | 5.8 |
| Caldwell Ranch | 4400 | 2/19 | 30 | 10.5 | 0.0 | — |
| Cascade Summit | 4880 | 2/27 | 71 | 28.6 | 4.9 | 30.6 ^h |
| Chemult | 4760 | 2/24 | 31 | 9.0 | 0.0 | 12.2 |
| Derr | 5670 | 2/28 | 31 | 9.4 | 0.5 | — |
| Fire Road | 5050 | 2/18 | 21 | 6.6 | 0.0 | — |
| Hogg Pass | 4755 | 2/27 | 96 | 35.0 | 7.5 | 42.0 |
| Hungry Flat | 4400 | 2/27 | 16 | 6.4 | 0.0 | 8.1 |
| Irish-Taylor | 5500 | 2/19 | 101 | 34.6 | 11.7 | — |
| Marks Creek | 4540 | 2/26 | 16 | 4.8 | 0.0 | 4.1 |
| Mowich | 4700 | 2/25 | 12 | 4.2 | 0.0 | — |
| New Crescent Lake | 4800 | 2/26 | 44 | 14.8 | 0.0 | 16.8 ^h |
| New Dutchman Flat #2 | 6400 | 2/27 | 108 | 43.9 | 20.2 | 48.3 ^h |
| Ochoco Meadows | 5200 | 2/27 | 29 | 8.1 | 0.0 | 10.3 |
| Paulina Lake | 6330 | 2/18 | 50 | 16.5 | 8.5 | — |
| Paulina Prairie | 4285 | 2/18 | 10 | 3.6 | 0.0 | — |
| Snow Mountain | 6300 | 2/25 | 36 | 10.5 | 5.5 | 13.0 ^h |
| Tamarack | 4800 | 2/26 | 20 | 5.7 | 0.0 | 6.2 ^h |
| Tangent | 5400 | 2/27 | 56 | 19.2 | 5.0 | 22.2 |
| Three Creeks Butte | 5200 | 2/28 | 26 | 9.6 | 0.0 | — |
| Three Creeks Meadows | 5600 | 2/28 | 49 | 17.6 | T | 20.0 ^h |
| Waldo Lake | 5500 | 2/20 | 85 | 27.1 | 5.5 | — |
| Willamette Pass | 5600 | 2/25 | 102 | 36.7 | 13.2 | 38.3 ^h |
| Windigo Pass | 5800 | 2/26 | 100 | 36.9 | 15.4 | 40.0 ^h |

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The satisfactory outlook for 1964 irrigation water supplies in the Hood River and Wasco county areas, foreseen one month ago, has been "dimmed" slightly by clear, cold February weather which brought near record-low precipitation and reduced streamflow.

SNOW COVER

Sparse snow storms in February increased the snow cover only lightly. Water content of the mountain snowpack is 91 percent of the March first average compared with 9 percent of average one year ago on this date.

SOIL MOISTURE

Moisture in the soil mantle under the snowpack is near average and should favor a good runoff from snowmelt water.

RESERVOIR STORAGE

Clear Lake Reservoir, serving the Juniper Flat Irrigation District, held about 1,500 acre feet of water near the end of February. This is short of the 4,400 acre feet on hand a year ago at this date.

STREAMFLOW

Forecasts have dropped slightly from the estimates of last month but are still up in the 96 to 98 percent of average range.

Flow of White River near Tygh Valley is forecast at 98 percent average for the April-September period. Flow of Rock, Gate, Three-Mile, Badger and Tygh Creeks is expected to be near average.

The Mile Creeks, Mill and Mosier creeks are expected to produce near average water supplies this spring and summer.

The West Fork of Hood River is forecast to flow 98 percent average in the April-September period. The full river, as measured near Hood River, is forecast to flow 350,000 acre feet April through September or 96 percent of average.

Near average water supplies are forecast for all irrigated lands with the possible exception of lands of the Juniper Flat Irrigation District near Wamic which will likely have some shortages.

Report prepared by

W. T. FROST AND BOB L. WHALEY

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

209 S.W. FIFTH AVENUE • PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|---------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Aldridge Ditch | Average | Average |
| Badger Creek | Average | Average |
| Dee Irrigation District | Average | Average |
| East Fork Irrig. Dist. | Average | Average |
| Farmers Irrig. Dist. | Average | Average |
| Hood River Irrig. Dist. | Average | Average |
| Juniper Flat Irrig. Dist. | Fair | Fair |
| Middle Fork Irrig. Dist. | Average | Average |
| Mile Creeks | Average | Average |
| Mill Creek | Average | Average |
| Mount Hood Irrig. Dist. | Average | Average |
| Rock-Gate-Threemile Crs. | Average | Average |
| Tygh Creek | Average | Average |
| White River | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Clear Lake | 11.8 | 1.5 | 4.4 | -- |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE |
|------|-----------------------------------|-----------------------|-----------------|--------------------|---------------------------------------|
| | | | | AVERAGE | OF AVERAGE |
| 1210 | Hood near Hood River ^d | 350 | April-Sept. | 365 | 96 |
| | | 300 | April-July | 311 | 96 |
| 1185 | Hood, West Fork near Dee | 170 | April-Sept. | 174 | 98 |
| | | 140 | April-July | 151 | 98 |
| 1015 | White below Tygh Valley | 175 | April-Sept. | 178 | 98 |
| | | 157 | April-July | 161 | 98 |

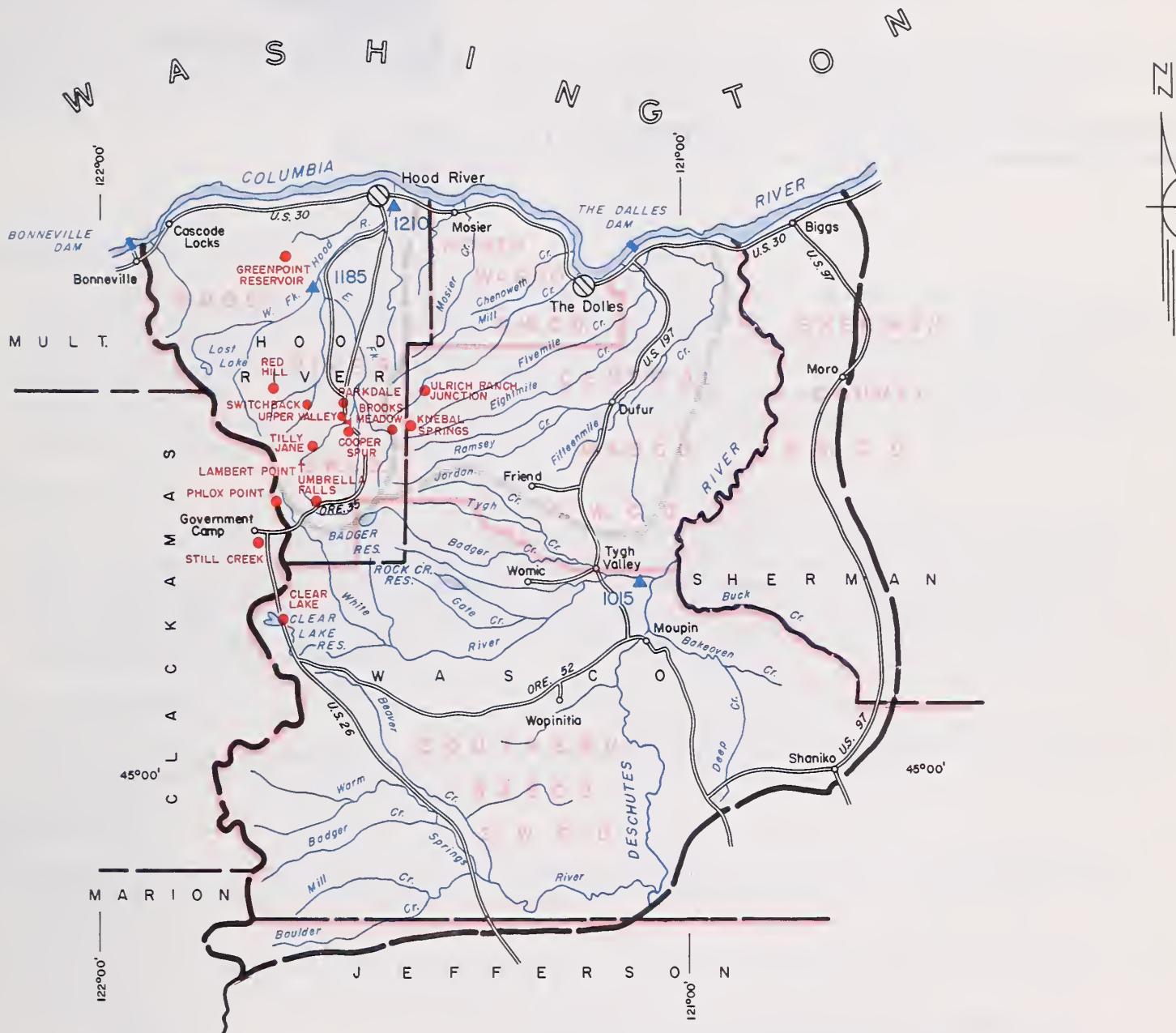
SNOW

| SNOW COURSE NAME | CURRENT INFORMATION | | | PAST RECORD | |
|----------------------------|---------------------|----------------|------------------------|------------------------------|------------------------|
| | ELEVATION | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) |
| | | | | | LAST YEAR |
| Brooks Meadows | 4300 | 2/27 | 29 | 12.0 | 0.0 |
| Clear Lake | 3500 | 2/26 | 24 | 8.4 | 0.0 |
| Clear Lake (Experimental) | 3500 | 2/26 | 40 | 14.6 | 0.0 |
| Cooper Spur | 3490 | 2/27 | 25 | 10.9 | 0.0 |
| Greenpoint Reservoir | 3400 | 2/27 | 39 | 14.3 | T |
| Knebal Springs | 3850 | 2/27 | 21 | 8.7 | 0.0 |
| Lambert Point ^e | 7000 | b | | | -- |
| Parkdale | 1770 | 2/27 | 0 | 0.0 | 0.0 |
| Phlox Point | 5600 | 2/29 | 143 | 59.0 | 10.5 |
| Red Hill | 4400 | 2/28 | 93 | 39.0 | 0.7 |
| Still Creek | 3700 | 2/26 | 59 | 24.8 | 0.0 |
| Switchback | 3255 | 3/2 | 46 | 16.0 | 2.2 |
| Tilly Jane | 6000 | 2/23 | 89 | 36.9 | 6.7 |
| Ulrich Ranch Junction | 3350 | 2/27 | 11 | 4.8 | 0.0 |
| Umbrella Falls | 5400 | 3/4 | 171 | 63.0 | 21.1 |
| Upper Valley | 2530 | 2/27 | 0 | 0.0 | 0.0 |

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

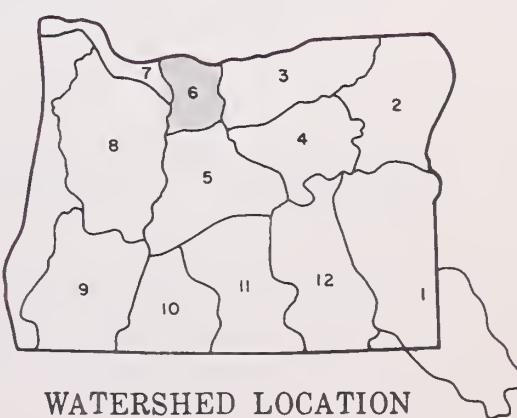
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

10 0 10 20
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- Soil Moisture Station



WATERSHED LOCATION

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK LOWER COLUMBIA WATERSHEDS OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 streamflow prospects are for near average flow on the main stem of the Columbia River with forecasts in the general range of 80 to 90 percent of average on the Snake River and its tributaries. Flows of about 90 percent of average are most probable for the Clark Fork and the Kootenai. Tributaries to the lower Columbia are expected to have slightly less than average flow in Oregon and just above average in Washington. Water supply outlook is good throughout the basin for both irrigation and power.

SNOW COVER

After a near maximum of record increase in snowpack during January, February snow accumulation tended to be deficient. Total seasonal snowfall is slightly above average in the Cascade Mountains of Washington and in northern British Columbia, and slightly less than average for tributaries in Oregon, Idaho, Wyoming and Montana. Snowfall has also been slightly less than average on the headwaters of the Kootenai.

SOIL MOISTURE

Soil moisture now tends to be above average except for the immediate area of the Continental Divide where soils are dry.

STREAMFLOW

Streamflow over the upper basin has been especially deficient on Snake River tributaries. Above normal flows have been experienced on the Okanogan watershed.

The flow of the Columbia at The Dalles*, Oregon has been less than average since October 1. The record by months is as follows:

| <u>Month</u> | <u>Percent of Average Discharge (1943-57)</u> | | |
|--------------|---|-----------------------------|---|
| | | <u>Adjusted for storage</u> | |
| October | 87 | " | " |
| November | 85 | " | " |
| December | 74 | " | " |
| January | 79 | " | " |
| February | 66 | " | " |

* From preliminary data furnished by Current Records Center, U. S. Geological Survey, Portland, Oregon.

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| NO. | NAME | FORECAST POINT | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|------|------------------------|----------------|-----------------------|---------------------------|--------------------|--|
| | | | | | | |
| 1057 | Columbia at The Dalles | | 99,140 67,000 | April-Sept. April-June | 106,100 72,000 | 93 93 |

HISTORICAL DATA (Columbia River at The Dalles)

| YEAR | STREAMFLOW ^d (1,000 A.F.) | | | PEAK (1,000 c.f.s.) | DATE |
|--------------|--------------------------------------|------------|-----------|------------------------|---------|
| | APR.— SEPT. | APR.— JUNE | MAY— JUNE | | |
| 1943 | 115,000 | 75,300 | 52,400 | 541 | June 21 |
| 1944 | 61,900 | 39,200 | 32,100 | 326 | June 19 |
| 1945 | 81,600 | 54,600 | 47,300 | 505 | June 8 |
| 1946 | 108,100 | 75,400 | 59,600 | 581 | May 30 |
| 1947 | 100,300 | 70,000 | 56,800 | 536 | May 11 |
| 1948 | 130,500 | 94,600 | 81,900 | 999 | May 31 |
| 1949 | 95,700 | 71,400 | 56,000 | 622 | May 18 |
| 1950 | 120,400 | 74,700 | 61,200 | 744 | June 25 |
| 1951 | 113,000 | 75,600 | 59,100 | 597 | May 26 |
| 1952 | 107,700 | 77,500 | 57,300 | 557 | May 28 |
| 1953 | 100,600 | 64,900 | 55,800 | 609 | June 17 |
| 1954 | 119,500 | 70,500 | 59,300 | 561 | May 23 |
| 1955 | 99,500 | 58,300 | 50,300 | 545 | June 26 |
| 1956 | 131,400 | 96,900 | 75,800 | 815 | June 3 |
| 1957 | 105,700 | 80,500 | 67,200 | 700 | May 22 |
| 1943-57 Avg. | 106,100 | 72,000 | 58,100 | 616 | |
| 1958 | 97,700 | 72,000 | 58,600 | 593 | May 31 |
| 1959 | 112,500 | 71,900 | 58,900 | 555 | June 23 |
| 1960 | 97,000 | 64,000 | 48,000 | 442 | June 6 |
| 1961 | 101,400 | 74,400 | 64,000 | 699 | June 8 |
| 1962 | 94,600 | 64,100 | 49,200 | 460 | June 5 |

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

| VANCOUVER GAGE (Weather Bu.) | FLOW AT THE DALLES (1,000 c.f.s.) | DRAINAGE DISTRICT PUMPHOUSE | | | | | | |
|------------------------------------|---|-----------------------------|-------------|-----------|-----------|---------|-------------|---------|
| | | SANDY | SAUVIE ISL. | SCAPPOOSE | DEER ISL. | RAINIER | BEAVER | WOODSON |
| | | | | | | | RIVER MILES | |
| | | 118.9 | 96.0 | 91.0 | 77.0 | 62.0 | 52.0 | 47.0 |
| 35 (1894) | 1210 | 41.2 | 34.2 | 33.3 | 28.5 | 21.9 | 17.5 | 15.5 |
| 34 | 1160 | 40.5 | 33.5 | 32.5 | 27.7 | 21.2 | 17.0 | 15.0 |
| 33 | 1100 | 39.6 | 32.4 | 31.4 | 26.7 | 20.2 | 16.1 | 14.3 |
| 32 | 1050 | 38.9 | 31.5 | 30.5 | 25.7 | 19.5 | 15.4 | 13.7 |
| 31 (1948) | 1000 | 38.0 | 30.7 | 29.5 | 25.1 | 18.8 | 14.7 | 13.0 |
| 30 | 940 | 36.6 | 29.5 | 28.5 | 24.3 | 18.1 | 14.0 | 12.4 |
| 29 | 890 | 35.5 | 28.5 | 27.7 | 23.7 | 17.5 | 13.4 | 11.8 |
| 28 | 840 | 34.3 | 27.5 | 26.7 | 22.8 | 17.0 | 13.0 | 11.4 |
| 27 (1956) | 790 | 33.0 | 26.5 | 25.6 | 21.8 | 16.2 | 12.5 | 11.0 |
| 26 (1950) | 750 | 32.1 | 25.5 | 24.6 | 20.9 | 15.5 | 12.2 | 10.7 |
| 25 | 700 | 30.7 | 24.2 | 23.2 | 19.7 | 14.6 | 11.7 | 10.3 |
| 24 | 660 | 29.7 | 23.0 | 22.2 | 19.0 | 14.1 | 11.4 | 10.2 |
| 23 | 630 | 29.0 | 22.3 | 21.4 | 18.4 | 13.6 | 11.2 | 10.0 |
| 22 | 590 | 28.1 | 21.4 | 20.3 | 17.2 | 13.0 | 10.9 | 9.7 |
| 21 | 560 | 27.2 | 20.7 | 19.5 | 16.4 | 12.6 | 10.6 | 9.6 |
| 20 | 530 | 26.2 | 19.8 | 18.6 | 15.5 | 12.1 | 10.2 | 9.4 |
| 19 | 510 | 25.5 | 19.2 | 18.0 | 15.0 | 11.8 | 10.0 | 9.3 |
| 18 | 480 | 24.4 | 18.3 | 17.2 | 14.3 | 11.4 | 9.8 | 9.1 |
| 17 | 450 | 23.4 | 17.4 | 16.4 | 13.7 | 11.0 | 9.6 | 8.9 |
| 16 | 430 | 22.4 | 16.5 | 15.5 | 13.0 | 10.5 | 9.3 | 8.7 |

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

LOWER COLUMBIA WATERSHEDS

A horizontal scale bar with tick marks every 2 miles, labeled 0, 10, 20, and 30. Below the scale bar is the text "SCALE IN MILES".



WATERSHED LOCATION

LEGEND

— Watershed Boundary
 — Sub-watershed Boundary
 — Soil Conservation District Bdry.
 — County Boundary
 (50) River Miles
 ● Snow Course



"The Conservation of Water begins with the Snow Survey"



WATER SUPPLY OUTLOOK WILLAMETTE WATERSHEDS OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The "near average" outlook for the Willamette Valley of one ago has been dimmed slightly. Clear, cool, February weather brought little precipitation and greatly reduced streamflow to the basin.

SNOW COVER

Water content of the snowpack increased at a lower than average February rate but is still 93 percent of the March 1 average. Last year at this time it was only 10 percent of average.

SOIL MOISTURE

Watershed soils are well primed and are expected to absorb little snowmelt water from spring runoff.

RESERVOIR STORAGE

Willamette Valley reservoirs are below last years' storage on March 1, but are expected to fill according to a pre-determined flood control plan designated by the Corps of Engineers as spring runoff progresses.

STREAMFLOW

Forecasts of streamflow in the Willamette Basin dropped 2 to 9 percent as a result of below average precipitation over most of the watershed during February.

Streamflow forecasts vary from 88 percent on the North Fork Santiam to 96 percent on the Row and Middle Fork Willamette for the April-September period. The flow of the Middle Fork Willamette* was 68 percent of average last month.

The Clackamas is expected to flow 97 percent of average at Estacada. The McKenzie is forecast at 91 percent of average for the April-September period.

The Willamette at Salem is expected to flow 4,855,000 acre feet or 89 percent of average for the same April-September period.

* Preliminary data furnished by U. S. Geological Survey, Portland, Oregon.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE • PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|-------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Calapooya | Average | Average |
| Clackamas | Average | Average |
| McKenzie | Average | Average |
| Molalla | Average | Average |
| Santiam, North | Average | Average |
| Santiam, South | Average | Average |
| Willamette, Coast Fork | Average | Average |
| Willamette, Middle Fork | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|---------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Cottage Grove | 30.8* | 7.7 | 10.0 | 9.7 |
| Cougar | 219.3* | 28.6 | -- | -- |
| Detroit | 299.9* | 62.2 | 164.0 | 79.3 |
| Dorena | 70.5* | 16.9 | 24.1 | 23.0 |
| Fern Ridge | 94.2* | 15.0 | 32.4 | 35.1 |
| Hills Creek | 249.0* | 62.1 | 105.8 | -- |
| Lookout Point | 337.2* | 65.5 | 178.9 | -- |
| Timothy Lake | 61.6 | 45.4 | 61.0 | -- |

*Multiple purpose reservoir--space reserved primarily for flood runoff.

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|------|---|-----------------------|-----------------|--------------------|--|--|
| | | | | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE ⁱ | |
| 2080 | Clackamas at Big Bottom | 165 | April-Sept. | 184 | 90 | |
| | | 135 | April-July | 150 | 90 | |
| 2100 | Clackamas at Estacada | 850 | April-Sept. | 879 | 97 | |
| | | 750 | April-July | 763 | 98 | |
| 2095 | Clackamas above Three Lynx | 640 | April-Sept. | 674 | 95 | |
| | | 550 | April-July | 578 | 95 | |
| 1590 | McKenzie at McKenzie Bridge | 585 | April-Sept. | 640 | 91 | |
| | | 445 | April-July | 488 | 91 | |
| 1625 | McKenzie near Vida | 1235 | April-Sept. | 1362 | 91 | |
| | | 1010 | April-July | 1120 | 90 | |
| 2090 | Oak Grove Fork above Power Intake | 185 | April-Sept. | 198 | 93 | |
| | | 145 | April-July | 156 | 93 | |
| 1545 | Row near Dorena | 110 | April-Sept. | 114 | 96 | |
| | | 105 | April-July | 109 | 96 | |
| 1830 | Santiam, North at Mehama ^d | 850 | April-Sept. | 968 | 88 | |
| | | 760 | April-July | 866 | 88 | |
| 1875 | Santiam, South at Waterloo | 585 | April-Sept. | 652 | 90 | |
| | | 555 | April-July | 616 | 90 | |
| 1480 | Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge | 870 | April-Sept. | 909 | 96 | |
| | | 780 | April-July | 804 | 97 | |
| 1910 | Willamette at Salem ^d | 4855 | April-Sept. | 5461 | 89 | |
| | | 4325 | April-July | 4942 | 88 | |

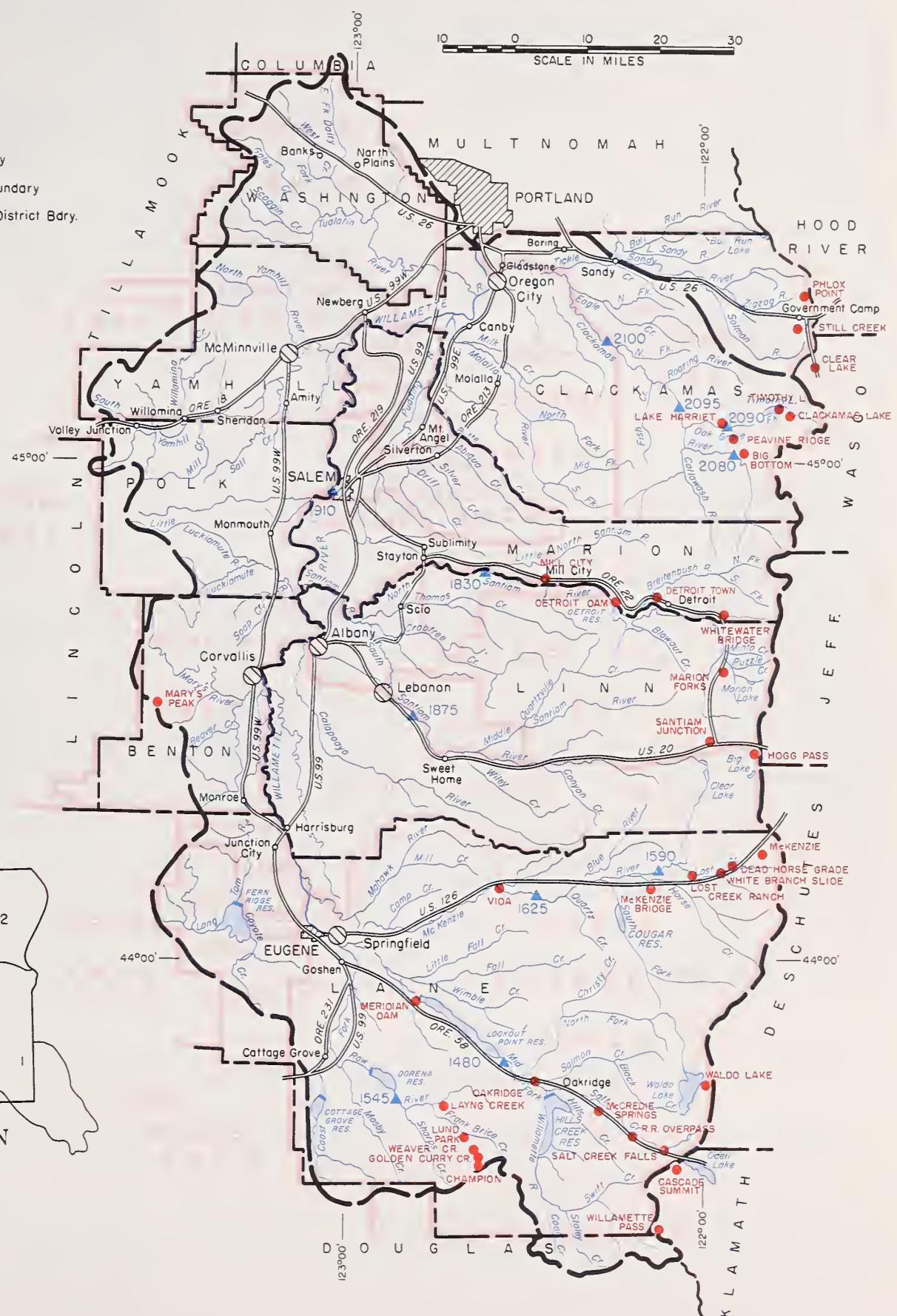
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial-snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

WILLAMETTE WATERSHEDS

10 0 10 20 30
SCALE IN MILES

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course



WATERSHED LOCATION

Willamette Watersheds

SNOW

| SNOW COURSE | | CURRENT INFORMATION | | | PAST RECORD | |
|---------------------------|-----------|---------------------|---------------------|------------------------|------------------------|-----------------|
| | | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) | LAST YEAR |
| NAME | ELEVATION | | | | | 1943-57 AVERAGE |
| Big Bottom | 2118 | 2/28 | 13 | 4.7 | 0.0 | 8.9 h |
| Cascade Summit | 4880 | 2/27 | 71 | 28.6 | 4.9 | 30.6 h |
| Champion | 4500 | 2/28 | 73 | 28.5 | 0.0 | 24.7 |
| Clackamas Lake | 3400 | 2/26 | 40 | 17.0 | 0.0 | 14.4 h |
| Clear Lake | 3500 | 2/26 | 24 | 8.4 | 0.0 | 14.0 h |
| Clear Lake (Experimental) | 3500 | 2/26 | 40 | 14.6 | 0.0 | -- |
| Dead Horse Grade | 3800 | 2/27 | 54 | 18.3 | 0.0 | 21.7 h |
| Detroit Town | 1610 | 2/27 | 0 | 0.0 | 0.0 | 1.8 h |
| Detroit Dam | 1580 | 2/27 | 0 | 0.0 | 0.0 | 0.8 h |
| Golden Curry Creek | 3136 | 2/28 | 30 | 11.8 | 0.0 | 6.6 h |
| Hogg Pass | 4755 | 2/27 | 96 | 35.0 | 7.5 | 42.0 |
| Lake Harriet | 2045 | 2/28 | 6 | 2.6 | 0.0 | 3.8 h |
| Layng Creek | 1200 | 2/28 | 0 | 0.0 | 0.0 | 0.0 |
| Lost Creek Ranch | 1956 | 2/27 | 22 | 9.0 | 0.0 | -- |
| Lund Park | 1740 | 2/28 | 0 | 0.0 | 0.0 | 1.3 h |
| Marion Forks | 2730 | Plowed out | | 0.0 | 0.0 | 15.9 |
| Marys Peak | 3620 | 2/29 | 31 | 10.8 | 0.0 | -- |
| McCredie Springs | 2120 | 2/27 | 0 | 0.0 | 0.0 | 0.9 h |
| McKenzie | 4800 | 2/27 | 102 | 39.4 | 8.0 | 43.3 h |
| McKenzie Bridge | 1372 | 2/27 | 0 | 0.0 | 0.0 | 1.6 h |
| Meridian Dam | 750 | 2/27 | 0 | 0.0 | 0.0 | 0.0 h |
| Mill City | 826 | 2/27 | 0 | 0.0 | 0.0 | 0.0 h |
| Oakridge | 1310 | 2/27 | 0 | 0.0 | 0.0 | T h |
| Peavine Ridge | 3500 | 2/28 | 54 | 19.1 | -- | 18.8 |
| Phlox Point | 5600 | 2/29 | 143 | 59.0 | 10.5 | 60.3 |
| Railroad Overpass | 2750 | 2/27 | 17 | 7.0 | 0.0 | 4.6 h |
| Salt Creek Falls | 4000 | 2/27 | 46 | 15.5 | 0.0 | 17.0 h |
| Santiam Junction | 3990 | 2/27 | 64 | 25.0 | 0.0 | 25.3 |
| Still Creek | 3700 | 2/26 | 59 | 24.8 | 0.0 | 25.5 |
| Timothy Lake | 3295 | 2/26 | 42 | 15.0 | 0.2 | -- |
| Vida | 800 | 2/27 | 0 | 0.0 | 0.0 | 0.0 h |
| Waldo Lake | 5500 | 2/20 | 85 | 27.1 | 5.5 | -- |
| Weaver Creek | 2440 | 2/28 | 0 | 0.0 | 0.0 | 2.7 h |
| White Branch Slide | 2800 | 2/27 | 30 | 10.2 | 0.0 | 8.8 h |
| Whitewater Bridge | 2175 | 2/27 | 14 | 5.3 | 0.0 | 7.9 h |
| Willamette Pass | 5600 | 2/25 | 102 | 36.7 | 13.2 | 38.3 h |

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK ROGUE, UMPQUA, WATERSHEDS OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The satisfactory outlook for 1964 irrigation water supplies in the Rogue-Umpqua area, foreseen one month ago, has been "dimmed" slightly by clear, cool February weather which brought near record-low precipitation and reduced streamflow.

SNOW COVER

Water content of the mountain snowpack increased sparingly in February and is now 94 percent of the March first average. A year ago the snow was only 19 percent of the average.

SOIL MOISTURE

Moisture in the soil mantle under the snowpack is near average and will absorb relatively little of the runoff produced by springtime snowmelt.

RESERVOIR STORAGE

Water stored for the Medford and Rogue River Valley Irrigation Districts in Fourmile and Fish Lakes now totals 17,300 acre feet compared with 13,200 a.f. one year ago. This is better than the average storage of 14,000 on March first. Water supplies should be adequate for this irrigation season.

The Talent Irrigation District has a total of 84,200 acre feet of stored water compared with 92,300 acre feet a year ago -- an adequate supply for 1964 irrigation.

STREAMFLOW

Forecasts of local streamflow have dropped from 11 to 15 percent from the estimates of last month, but are still up in the 85 to 100 percent average range.

Flow of the North Umpqua below Lemolo Reservoir is forecast at 91 percent average for the period April through September. The Clearwater is estimated at 91 percent for this period.

Flow of Rogue River at Raygold is forecast at 87 percent average April through September and the Rogue above Prospect is estimated at 90 percent. Water users of the Grants Pass Irrigation District should be able to complete their irrigation season without canal alternation this year.

The Applegate and Illinois Rivers are forecast at 85 and 98 percent average for the April-September period.

Report prepared by

W. T. FROST AND ROB L. WHALEY

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|----------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Althouse Creek | Average | Average |
| Applegate River, Big | Average | Average |
| Applegate River, Little | Average | Average |
| Ashland Creek | Average | Average |
| Butte Creek, Little | Average | Average |
| Butte Creek, Big | Average | Average |
| Cow Creek | Average | Average |
| Deer Creek | Average | Average |
| Elk Creek | Average | Average |
| Emigrant Creek (abv. Res.) | Average | Average |
| Evans Creek | Average | Average |
| Gold Hill Irrigation Dist. | Average | Average |
| Grants Pass Irrig. Dist. | Average | Average |
| Grave Creek | Average | Average |
| Illinois River, East Fork | Average | Average |
| Illinois River, West Fork | Average | Average |
| Jump-off-Joe Creek | Average | Average |
| Neil Creek | Average | Average |
| Red Blanket Creek | Average | Average |
| Rogue River | Average | Average |
| Sucker Creek | Average | Average |
| Table Rock Irrig. Dist. | Average | Average |
| Thompson Creek | Average | Average |
| Wagner Creek | Average | Average |
| Williams Creek | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1964

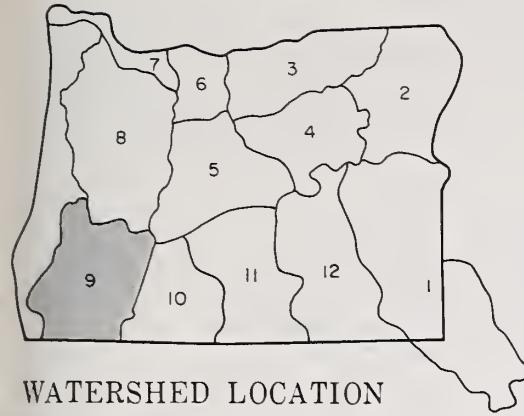
| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|----------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Emigrant Gap | 39.0 | 28.0 | 34.3 | 6.1 |
| Fish Lake | 7.8 | 4.7 | 5.0 | 5.3 |
| Fourmile Lake | 16.1 | 12.6 | 8.2 | 8.7 |
| Howard Prairie | 60.0 | 44.6 | 44.2 | — |
| Hyatt Prairie | 16.1 | 11.6 | 13.8 | 7.0 |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

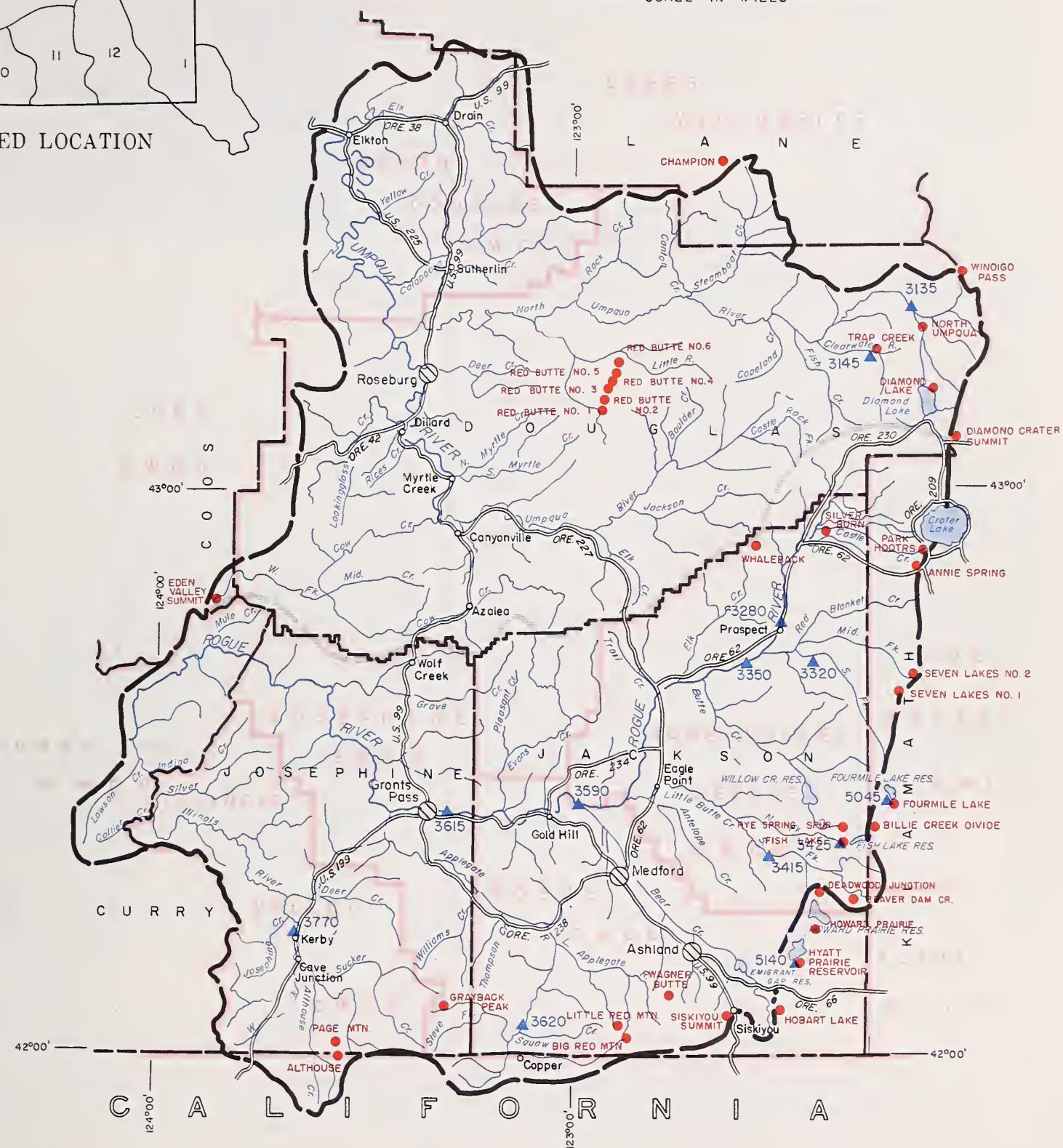
| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|------|---|-----------------------|-----------------|--------------------|--|
| | | | | | |
| 3620 | Applegate near Copper | 110 | April-Sept. | 131 | 85 |
| 3145 | Clearwater above Trap Creek ^d | 66 | April-Sept. | 73 | 90 |
| 5045 | Fourmile Lake net Inflow ^d | 7.1 | March-Sept. | 7.6 | 93 |
| 5140 | Hyatt Reservoir net Inflow ^d | 5.6 | April-Sept. | 6.2 | 90 |
| 3770 | Illinois River at Kerby | 315 | March-July | 314 | 100 |
| | | 192 | April-Sept. | 196 | 98 |
| 3425 | Little Butte, N. Fk. at Fish Lake nr. Lake Cr. ^d | 15.0 | April-Sept. | 16.9 | 89 |
| 3415 | Little Butte, So. Fk. nr. Lake Creek | 40 | April-July | 42 | 95 |
| | Note: Minimum flow will drop to 100 c.f.s. by June 7. | | | | |
| 3280 | Rogue above Prospect | 315 | April-Sept. | 351 | 90 |
| | | 265 | April-July | 293 | 90 |
| 3320 | Rogue, South Fork near Prospect ^d | 76 | April-Sept. | 83 | 91 |
| | | 65 | April-July | 71 | 92 |
| 3350 | Rogue below South Fork | 675 | April-Sept. | 749 | 90 |
| | | 550 | April-July | 608 | 90 |
| 3590 | Rogue at Raygold near Central Point | 875 | April-Sept. | 1004 | 87 |
| | | 740 | April-July | 842 | 88 |
| 3615 | Rogue at Grants Pass | 850 | April-Sept. | 974 | 87 |
| 3135 | Umpqua, No. blw. Lemolo Res. nr. Toketee Falls ^d | 170 | April-Sept. | 186 | 91 |

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

ROGUE, UMPQUA WATERSHEDS



WATERSHED LOCATION



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course

Rogue, Umpqua Watersheds

SNOW

| SNOW COURSE | | CURRENT INFORMATION | | | PAST RECORD | |
|------------------------------|-----------|---------------------|---------------------|------------------------|------------------------|-------------------|
| | | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) | LAST YEAR |
| NAME | ELEVATION | | | | | 1943-57 AVERAGE |
| Althouse | 4530 | 2/27 | 14 | 6.3 | 0.0 | 5.8 |
| Annie Spring | 6018 | 2/29 | 90 | 35.1 | 12.8 | 41.0 |
| Beaver Dam Creek | 5100 | 2/27 | 39 | 13.3 | 0.0 | -- |
| Big Red Mountain | 6500 | 2/26 | 50 | 17.2 | 6.6 | 24.4 ^h |
| Billie Creek Divide | 5300 | 2/27 | 62 | 21.5 | T | 23.6 |
| Champion | 4500 | 2/28 | 73 | 28.5 | 0.0 | 24.7 |
| Cold Springs Camp | 6100 | 2/28 | 82 | 28.3 | 9.2 | -- |
| Deadwood Junction | 4600 | 2/27 | 40 | 13.6 | 0.0 | -- |
| Diamond-Crater Summit | 5800 | 2/20 | 89 | 29.5 | 10.8 | -- |
| Diamond Lake | 5315 | 2/20 | 61 | 18.8 | 1.2 | 23.0 |
| Eden Valley Summit | 2390 | 3/3 | 23 | 8.4 | 0.0 | -- |
| Fish Lake | 4865 | 2/27 | 48 | 17.6 | 0.0 | 12.0 |
| Fourmile Lake | 6000 | 2/27 | 50 | 19.2 | 20.4 | 26.0 ^h |
| Grayback Peak | 6000 | 2/27 | 62 | 25.7 | 0.0 | 23.4 |
| Hobart Lake | 5010 | b | | | | |
| Howard Prairie | 4500 | 2/27 | 31 | 10.5 | 0.0 | -- |
| Hyatt Prairie Reservoir | 4900 | 2/27 | 28 | 9.2 | 0.0 | 9.5 ^h |
| King Mountain #1 | 4800 | b | | | | |
| Little Red Mountain | 6500 | 2/25 | 44 | 15.8 | 1.4 | 19.1 ^h |
| North Umpqua near Lake Creek | 4215 | 2/27 | 46 | 17.8 | T | 14.0 |
| Page Mountain | 4045 | 2/27 | 6 | 2.4 | 0.0 | -- |
| Park Headquarters | 6450 | 2/29 | 118 | 48.0 | 23.2 | 51.7 ^h |
| Red Butte #1 | 4560 | b | | | | |
| Red Butte #2 | 4000 | 2/28 | 40 | 15.3 | 0.0 | -- |
| Red Butte #3 | 3500 | 2/28 | 31 | 11.8 | 0.0 | -- |
| Red Butte #4 | 3000 | 2/28 | 16 | 6.0 | 0.0 | -- |
| Red Butte #5 | 2500 | 2/28 | 0 | 0.0 | 0.0 | -- |
| Red Butte #6 | 2000 | 2/28 | 0 | 0.0 | 0.0 | -- |
| Rye Spring Spur | 5000 | 2/27 | 42 | 15.9 | 0.0 | -- |
| Seven Lakes #1 | 6800 | 2/25 | 122 | 46.2 | 18.8 | 51.0 ^h |
| Seven Lakes #2 | 6200 | 2/24 | 94 | 33.2 | 6.7 | 37.3 |
| Silver Burn | 3720 | 2/26 | 40 | 14.5 | 0.0 | 13.3 |
| Siskiyou Summit (Alternate) | 4630 | 2/28 | 22 | 7.4 | 0.0 | 7.1 ^h |
| South Fork Canal | 3500 | 2/27 | 11 | 4.5 | 0.0 | 3.4 |
| Trap Creek | 3800 | 2/27 | 41 | 16.0 | 0.0 | -- |
| Wagner Butte | 6900 | b | | | | |
| Whaleback | 5140 | 2/28 | 81 | 29.0 | 1.2 | 33.1 ^h |
| Windigo Pass | 5800 | 2/26 | 100 | 36.9 | 15.4 | 40.0 ^h |

WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The satisfactory outlook for 1964 irrigation water supplies in Klamath Basin, foreseen one month ago, has been "dimmed" slightly by clear, cool February weather which brought near record-low precipitation and reduced streamflow.

SNOW COVER

Water content of the mountain snowpack increased only slightly and is now 97 percent of the March first average. A year ago it was only 23 percent of average.

SOIL MOISTURE

Moisture in the soil mantle under the snowpack is 74 percent of capacity and is favorable to a good runoff from snowmelt this spring.

RESERVOIR STORAGE

Gerber Reservoir contains 36,980 acre feet of water compared with 42,100 a.f. one year ago. Clear Lake Reservoir now holds 94,890 acre feet compared with 132,500 acre feet last year. Inflow to these two reservoirs has been nearly zero in the past month.* However, there are 5.5 inches of water remaining in the snowpack at Gerber Dam with a runoff potential sufficient to adequately increase the storage in these two important reservoirs.

Upper Klamath Lake now holds 315,100 acre feet compared with 493,600 a. f. one year ago. Coupled with expected inflow this reservoir will also produce satisfactory water supplies this summer season.

STREAMFLOW

Flow into Gerber and Clear Lake reservoirs is forecast at 42,000 and 85,000 a.f. or 95 and 98 percent of average for the March through June period.

Flow of Sprague River near Chiloquin is forecast at 275,000 acre feet or 91 percent average for the March-June period. Williamson River below Sprague River is forecast 430,000 acre feet or 88 percent for the same period.

Inflow to Upper Klamath Lake is forecast at 600,000 acre feet or 92 percent for the period March through June. The inflow to the lake during the month of February was 113,062 acre feet or 79 percent of the 1943-57 average**.

* Preliminary data from the U. S. Bureau of Reclamation, Klamath Falls, Oregon

** Preliminary data from Pacific Power & Light Co., Medford, Oregon

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE • PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|--------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Ft. Klamath Valley | Average | Average |
| Lost River (Clear Lake) | Average | Average |
| Lost River (Gerber) | Average | Average |
| Lost River (Willow Res.) | Average | Average |
| Sprague River | Average | Average |
| Upper Klamath Lake | Average | Average |
| Williamson River | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|--------------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Clear Lake | 440.2 | 94.9 | 132.5 | 224.0 |
| Gerber | 94.0 | 37.0 | 42.1 | 38.3 |
| Upper Klamath Lake | 584.0 | 315.1 | 498.6 | 390.0 |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|------|--|-----------------------|-----------------|-----------------------|--------------------|--|
| | | | | FORECAST THIS YEAR | 1943-57 AVERAGE | |
| 923 | Clear Lake Reservoir Inflow ^k | 85 | March-June | 87 | 98 | |
| | | 48 | April-Sept. | 50 | 96 | |
| 8215 | Gerber Reservoir Inflow ^k | 42 | March-June | 44 | 95 | |
| | | 24 | April-Sept. | 25 | 96 | |
| 5010 | Sprague near Chiloquin | 275 | March-June | 303 | 91 | |
| | | 260 | April-Sept. | 296 | 88 | |
| 5070 | Upper Klamath Lake net Inflow ^k | 600 | March-June | 655 | 92 | |
| | | 580 | April-Sept. | 632 | 92 | |
| 5025 | Williamson below Sprague River | 430 | March-June | 473 | 88 | |
| | | 415 | April-Sept. | 486 | 88 | |

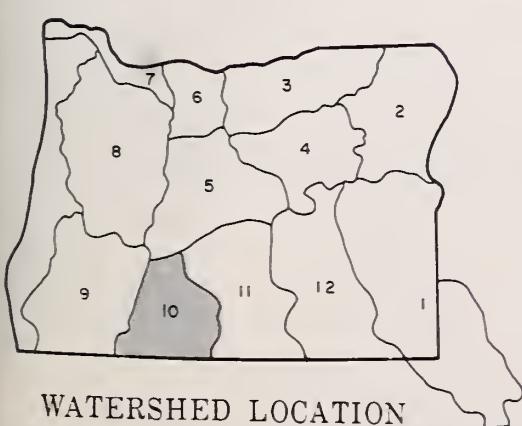
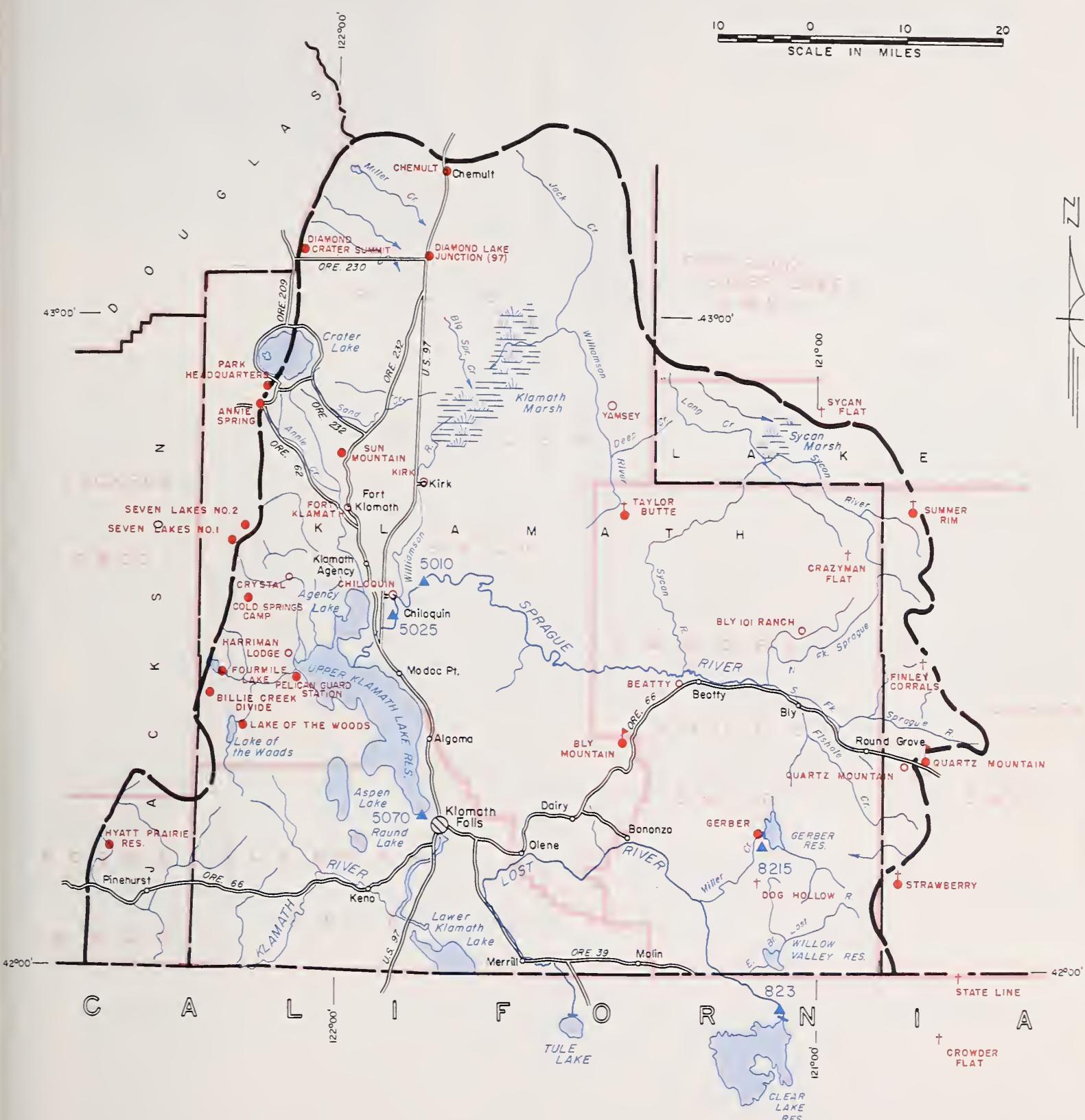
SOIL MOISTURE

| STATION NAME | ELEVATION | PROFILE (Inches) | | SOIL MOISTURE (Inches) | | |
|-----------------|-----------|------------------|----------|------------------------|----------------|--------------|
| | | DEPTH | CAPACITY | DATE | THIS YEAR | LAST YEAR |
| | | | | | 2 YEARS AGO | |
| Bly Mountain | 5090 | 42 | 14.0 | 2-27-64 | 10.4 | 12.9 |

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

KLAMATH WATERSHEDS

10 0 10 20
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- † Aeriel Snow Depth Goge
- COPCO Snow Station
- Soil Moisture Station

Klamath Watersheds

SNOW

| SNOW COURSE | NAME | ELEVATION | CURRENT INFORMATION | | | PAST RECORD | |
|----------------------------|------|-----------|---------------------|---------------------|------------------------|------------------------|-----------|
| | | | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | WATER CONTENT (Inches) | LAST YEAR |
| Annie Spring | | 6018 | 2/29 | 90 | 35.1 | 12.8 | 41.0 |
| Beatty (PP&L) | | 4300 | 2/26 | 3 | 0.9 | 0.0 | 0.2 |
| Billie Creek Divide | | 5300 | 2/27 | 62 | 21.5 | T | 23.6 |
| Bly Mountain | | 5090 | 2/27 | 25 | 8.2 | 0.0 | -- |
| Bly 101 Ranch (PP&L) | | 4800 | 2/28 | 13 | 4.4 | 0.0 | 1.0 |
| Chemult | | 4760 | 2/24 | 31 | 9.0 | 0.0 | 12.2 |
| Chiloquin (PP&L) | | 4187 | b | | | | |
| Cold Springs Camp | | 6100 | 2/28 | 82 | 28.3 | 9.2 | -- |
| Crazyman Flat e | | 6100 | 2/25 | 28 | 8.4 | 0.0 | -- |
| Crowder Flat e (Calif.) | | 5200 | 2/25 | 15 | 4.5 | 0.0 | 3.9 h |
| Crystal (PP&L) | | 4200 | 2/27 | 27 | 7.3 | 0.0 | 9.3 |
| Diamond-Crater Summit | | 5800 | 2/20 | 89 | 29.5 | 10.8 | -- |
| Diamond Lake Junction (97) | | 4600 | 2/20 | 21 | 7.0 | 0.0 | -- |
| Dog Hollow e | | 4900 | 2/25 | 8 | 2.4 | 0.0 | -- |
| Finley Corrals e | | 6000 | 2/25 | 51 | 15.3 | 0.8 | -- |
| Fort Klamath (PP&L) | | 4150 | 2/28 | 19 | 6.2 | 0.0 | 3.4 |
| Gerber | | 4850 | 2/28 | 18 | 5.5 | 0.0 | 2.6 h |
| Harriman (Tomahawk) | | 4200 | 2/28 | 28 | 12.8 | 0.0 | 4.4 h |
| Hyatt Prairie Reservoir | | 4900 | 2/27 | 28 | 9.2 | 0.0 | 9.5 h |
| Kirk (PP&L) | | 4533 | 2/29 | 23 | 7.9 | 0.0 | 6.0 |
| Lake of the Woods | | 4960 | 2/26 | 40 | 13.8 | 0.0 | 11.2 |
| Park Headquarters | | 6450 | 2/29 | 118 | 48.0 | 23.2 | 51.7 h |
| Pelican Guard Station | | 4150 | 2/27 | 19 | 5.1 | 0.0 | -- |
| Quartz Mountain | | 5320 | 2/27 | 23 | 6.8 | 0.0 | 6.3 |
| Quartz Mountain (PP&L) | | 5504 | 2/27 | 24 | 6.9 | 0.0 | 6.4 h |
| Seven Lakes #1 | | 6800 | 2/25 | 122 | 46.2 | 18.8 | 51.0 |
| Seven Lakes #2 | | 6200 | 2/24 | 94 | 33.2 | 6.7 | 37.3 |
| State Line e (Calif.) | | 5750 | 2/25 | 34 | 10.2 | 0.0 | -- |
| Strawberry | | 5600 | 2/26 | 25 | 7.8 | 0.0 | 8.2 h |
| Summer Rim | | 7200 | 2/27 | 37 | 12.3 | 4.6 | 14.7 h |
| Sun Mountain | | 5350 | 2/19 | 67 | 21.5 | 4.3 | 25.5 |
| Sycan Flat e | | 5500 | 2/25 | 21 | 6.3 | 0.0 | -- |
| Taylor Butte | | 5100 | 2/26 | 16 | 5.5 | 0.0 | -- |
| Yamsey (PP&L) | | 4600 | b | | | | |

WATER SUPPLY OUTLOOK LAKE COUNTY, GOOSE LAKE WATERSHEDS OREGON

as of
MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Near average water supplies are still in prospect for Lake County although a clear, cold, February and near record-low precipitation has slightly dimmed the water supply outlook of one month ago.

The snowpack did not receive the usual increases during February and streamflow was reduced to a trickle by cold temperatures.

SNOW COVER

Water content of the Lake County snowpack is now 92 percent of the March 1 average. On February 1 it was 117 percent of average.

Although the increase to the snowpack during February was well below average, most of the major watersheds have held the snow they received in January as a result of the freezing weather during the month.

SOIL MOISTURE

Soil moisture, as measured at Camas Creek, although not as good as last year, is now 88 percent of capacity and will favor runoff from spring snowmelt.

RESERVOIR STORAGE

Inflow to reservoirs in Lake County has been very low during February as a result of low temperatures and a lack of precipitation. Drews Reservoir now holds 38,900 acre feet; last year it held 42,300 acre feet at this time. Cottonwood has 1,100 acre feet and last year it held 5,100 a.f. on March 1.

STREAMFLOW

Drews Reservoir inflow during the March-July period is forecast at 45,000 acre feet or 96 percent of the 1943-57 average. Together with stored water, this will be an adequate supply for Lakeview Water Users, Incorporated.

The Chewaucan is expected to flow 87,000 acre feet or 95 percent of average for the March-June period. Warner Valley streams are forecast as follows for the March-June period:

| | |
|------------------|----------------------------|
| Twentymile Creek | 30,000 a.f. or 107 percent |
| Deep Creek | 80,000 a.f. or 96 percent |
| Honey Creek | 20,000 a.f. or 104 percent |

Average water supplies are foreseen for all irrigated acres in the Lake County and the potential is on the watershed if a rapid melt occurs.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE • PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|----------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Chewaucan River | Average | Average |
| Crooked Creek | Average | Average |
| Deep Creek | Average | Average |
| Dry Creek | Average | Average |
| East Side Goose Lake | Average | Average |
| Guano Lake | Average | Average |
| Honey Creek | Average | Average |
| Lakeview Water Users Assn. | Average | Average |
| Rock Creek (Hart Mtn.) | Average | Average |
| Silver-Buck Creeks | Average | Average |
| Summer Lake | Average | Average |
| Thomas Creek | Average | Average |
| Twenty-mile Creek | Average | Average |
| Warner Lakes | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.)

March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|------------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| Cottonwood | 8.7 | 1.1 | 5.1 | 0.7 |
| Drew | 63.0 | 38.9 | 42.3 | 40.7 |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 AVERAGE | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|------|---------------------------|-----------------------|-----------------|--------------------|--|
| | | | | | |
| 3840 | Chewaucan near Paisley | 87 | March-June | 92 | 95 |
| 3715 | Deep above Adel | 80 | March-June | 83 | 96 |
| 3385 | Drew Reservoir net Inflow | 45 | March-July | 47 | 96 |
| 3785 | Honey near Plush | 20 | March-June | 19.2 | 104 |
| 3660 | Twenty-mile near Adel | 30 | March-June | 28 | 107 |

SOIL MOISTURE

| STATION NAME | PROFILE (Inches) | | SOIL MOISTURE (Inches) | | | | |
|-----------------|------------------|-------|------------------------|---------|--------------|--------------|-------------------|
| | ELEVATION | DEPTH | CAPACITY | DATE | THIS YEAR | LAST YEAR | 2 YEARS AGO |
| | | | | | | | |
| Camas Creek | 5720 | 42 | 14.5 | 2-28-64 | 12.7 | 13.0 | 10.6 ^f |
| Quartz Mountain | 5320 | 48 | 15.3 | 2-27-64 | 8.4 | 10.9 | 8.3 |

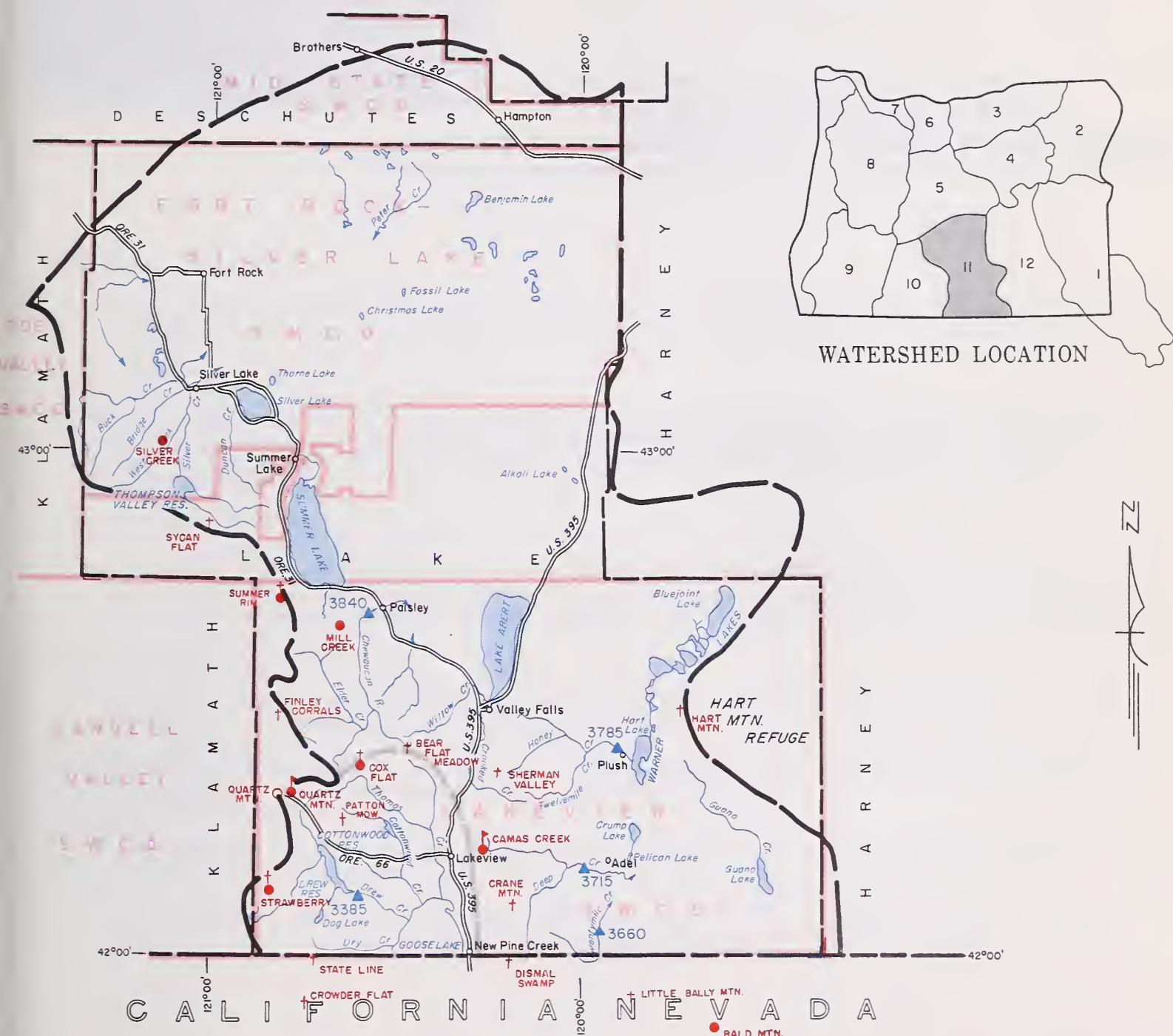
SNOW

| SNOW COURSE NAME | ELEVATION | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) | CURRENT INFORMATION | | PAST RECORD | |
|---|-----------|----------------|------------------------|------------------------------|---------------------|-------------------|-------------|-----------------|
| | | | | | LAST YEAR | 1943-57 AVERAGE | LAST YEAR | 1943-57 AVERAGE |
| Bald Mountain (Nev.) ^e | 6720 | 2/27 | 9 | 2.3 | 0.0 | 3.3 | | |
| Bear Flat Meadow ^e | 5900 | 2/25 | 20 | 6.0 | 0.0 | -- | | |
| Camas Creek | 5720 | 2/28 | 32 | 10.8 | 0.0 | 11.0 ^h | | |
| Cox Flat ^e | 5750 | 2/24 | 28 | 8.4 | 0.0 | -- | | |
| Crane Mountain ^e | 6020 | 2/24 | 11 | 3.3 | 0.0 | -- | | |
| Crowder Flat (Calif.) ^e | 5200 | 2/25 | 15 | 4.5 | 0.0 | 3.9 ^h | | |
| Dismal Swamp (Calif.) ^e | 7000 | 2/24 | 42 | 9.0 | 2.4 | -- | | |
| Finley Corrals ^e | 6000 | 2/25 | 51 | 15.3 | 0.8 | -- | | |
| Hart Mountain ^e | 6350 | 2/24 | 5 | 1.5 | 0.0 | -- | | |
| Little Bally Mountain (Nev.) ^e | 6600 | 2/24 | 6 | 1.8 | 0.0 | -- | | |
| Mill Creek | 6200 | 2/28 | 20 | 6.3 | 0.4 | 8.1 | | |
| Patton Meadows ^e | 6800 | 2/24 | 40 | 12.0 | 2.4 | -- | | |
| Quartz Mountain (PP&L) | 5504 | 2/27 | 24 | 6.9 | 0.0 | 6.4 ^h | | |
| Quartz Mountain | 5320 | 2/27 | 23 | 6.8 | 0.0 | 6.3 | | |
| Sherman Valley ^e | 6600 | 2/24 | 35 | 10.5 | 1.6 | -- | | |
| Silver Creek | 4900 | 2/28 | 8 | 2.4 | 0.0 | 3.7 | | |
| State Line (Calif.) ^e | 5750 | 2/25 | 34 | 10.2 | 0.0 | -- | | |
| Strawberry | 5600 | 2/26 | 25 | 7.8 | 0.0 | 8.2 ^h | | |
| Summer Rim | 7200 | 2/27 | 37 | 12.3 | 4.6 | 14.7 ^h | | |
| Sycan Flat ^e | 5500 | 2/25 | 21 | 6.3 | 0.0 | -- | | |

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

LAKE COUNTY, GOOSE LAKE WATERSHEDS

10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course
- Aeriel Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station

WATER SUPPLY OUTLOOK HARNEY BASIN WATERSHEDS OREGON

as of

MARCH 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Harney Basin's satisfactory water supply outlook for 1964 has been "dimmed" slightly by clear, cool, February weather which brought near record-low precipitation.

SNOW COVER

Water content of the mountain snowpack increased sparingly during the dry, cool weather of the past month and is now 85 percent of average in North Harney and 90 percent average in South Harney. One year ago the snowpack was only 19 percent of average.

SOIL MOISTURE

Moisture in the soil mantle under the snowpack is now 84 percent of capacity in North Harney but only 61 percent in South Harney. A greater percentage of snowmelt runoff will be absorbed in the southern part of the basin than in the northern.

STREAMFLOW

Streamflow forecasts in Harney Basin have dropped off from 15 to 23 percent from last months' estimates but are still up in the 80 to 97 percent of average range.

Flow of the Silvies River is forecast at 91,000 acre feet or 85 percent average for the April through September period. Silver Creek is expected to flow 96 percent in the April-July period.

The Blitzen River is forecast at 65,000 acre feet or 97 percent April through September and Trout Creek should flow 80 percent average for that period.

Smaller streams of the county are expected to have flows slightly below average this year but the spring snowmelt peak should be very close to average.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

| STREAM or AREA | FLOW PERIOD | |
|--------------------------|---------------|-------------|
| | SPRING SEASON | LATE SEASON |
| Catlow Valley | Average | Average |
| Cow Creek | Average | Average |
| Donner und Blitzen River | Average | Average |
| Mill-Coffeepot Creeks | Average | Average |
| Rattlesnake Creek | Average | Average |
| Silver Creek | Average | Average |
| Silvies River | Average | Average |
| Soldier-Prather Creek | Average | Average |
| Trout Creek | Average | Average |
| Whitehorse Creek | Average | Average |

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1964

| RESERVOIR | USABLE CAPACITY | MEASURED (First of Month) | | |
|-----------|-----------------|---------------------------|-----------|-----------------|
| | | THIS YEAR | LAST YEAR | 1943-57 AVERAGE |
| | | | | |

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of March 1, 1964

| NO. | FORECAST POINT NAME | FORECAST THIS YEAR | FORECAST PERIOD | 1943-57 | THIS YEAR AS PERCENT OF AVERAGE ⁱ |
|------|------------------------------------|-----------------------|-----------------|---------|--|
| | | | | AVERAGE | |
| 3960 | Donner und Blitzen near Frenchglen | 60 | March-June | 63 | 95 |
| | | 65 | April-Sept. | 67 | 97 |
| 4030 | Silver near Riley | 25 | April-July | 26 | 96 |
| 3935 | Silvies near Burns | 105 | March-June | 124 | 85 |
| | | 91 | April-Sept. | 107 | 85 |
| 4065 | Trout near Denio | 7.6 | March-July | 9.5 | 80 |
| | | 7.4 | April-Sept. | 9.2 | 80 |

SOIL MOISTURE

| STATION | PROFILE (Inches) | | SOIL MOISTURE (Inches) | | | |
|-----------------------|------------------|----------|------------------------|-----------|-------------------|-------------------|
| | DEPTH | CAPACITY | DATE | THIS YEAR | LAST YEAR | 2 YEARS AGO |
| NAME | ELEVATION | | | | | |
| Blue Mountain Springs | 5900 | 42 | 16.9 | 2-27-64 | 7.4 | 13.5 |
| Fish Creek | 7600 | 48 | 15.0 | 2-26-64 | 9.0 | 11.8 |
| Folly Farm | 4450 | 36 | 12.5 | 12-19-63 | 8.3 ^f | 9.0 ^f |
| Silvies | 6900 | 48 | 16.4 | 2-26-64 | 10.1 | 13.6 |
| Snow Mountain | 6300 | 48 | 16.7 | 2-25-64 | 12.3 | 14.8 |
| Starr Ridge | 5150 | 36 | 10.6 | 2-27-64 | 8.3 | 10.5 |
| Stinking Water | 4800 | 48 | 21.9 | 12-19-63 | 20.8 ^f | 21.1 ^f |
| Willow-Bald | 5000 | 24 | 6.6 | 2-25-64 | 5.3 | 6.5 |

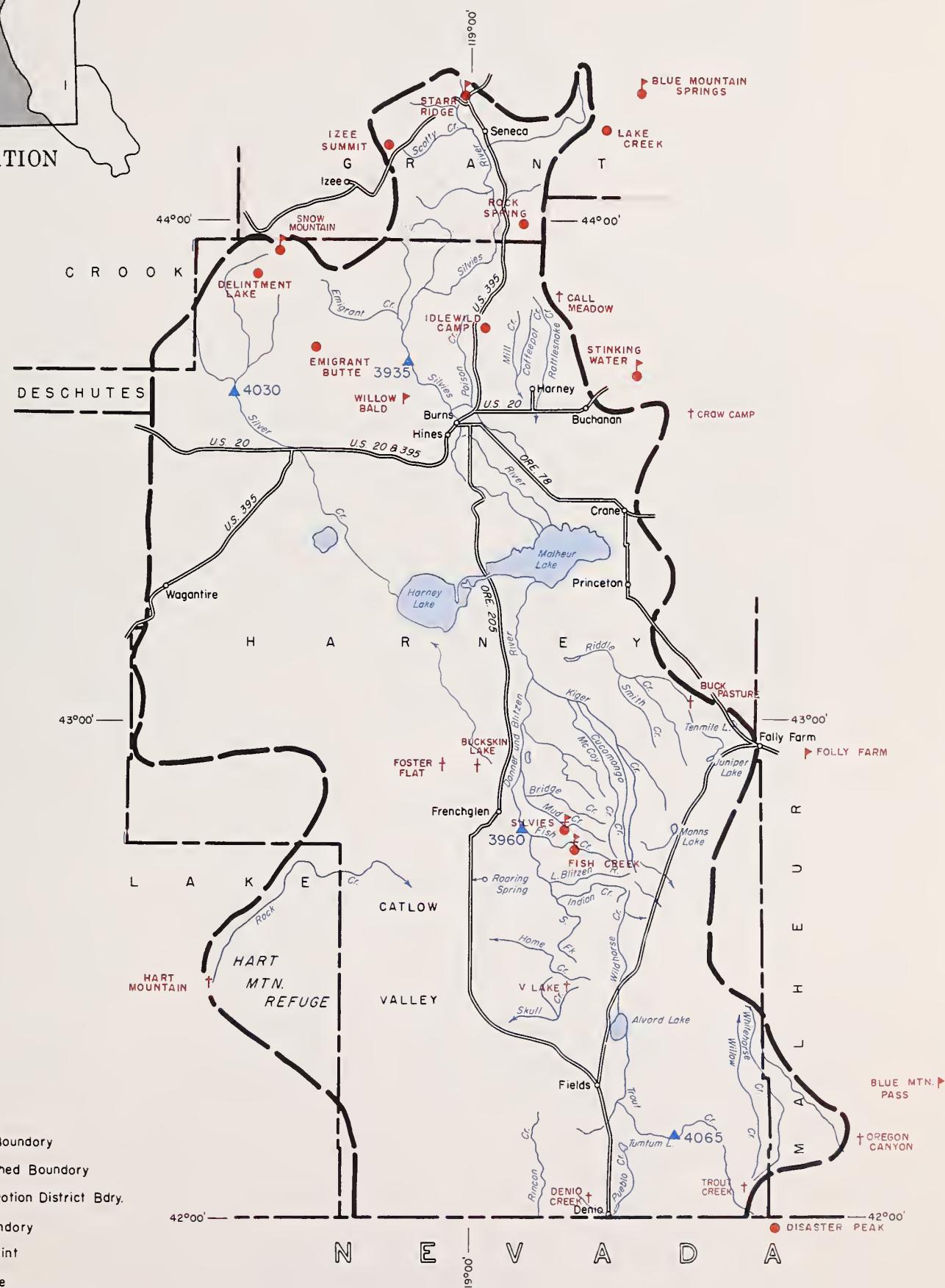
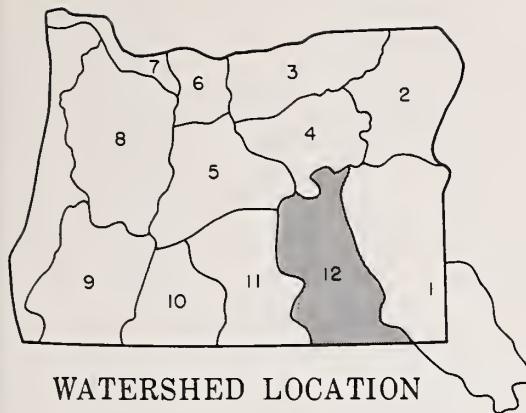
SNOW

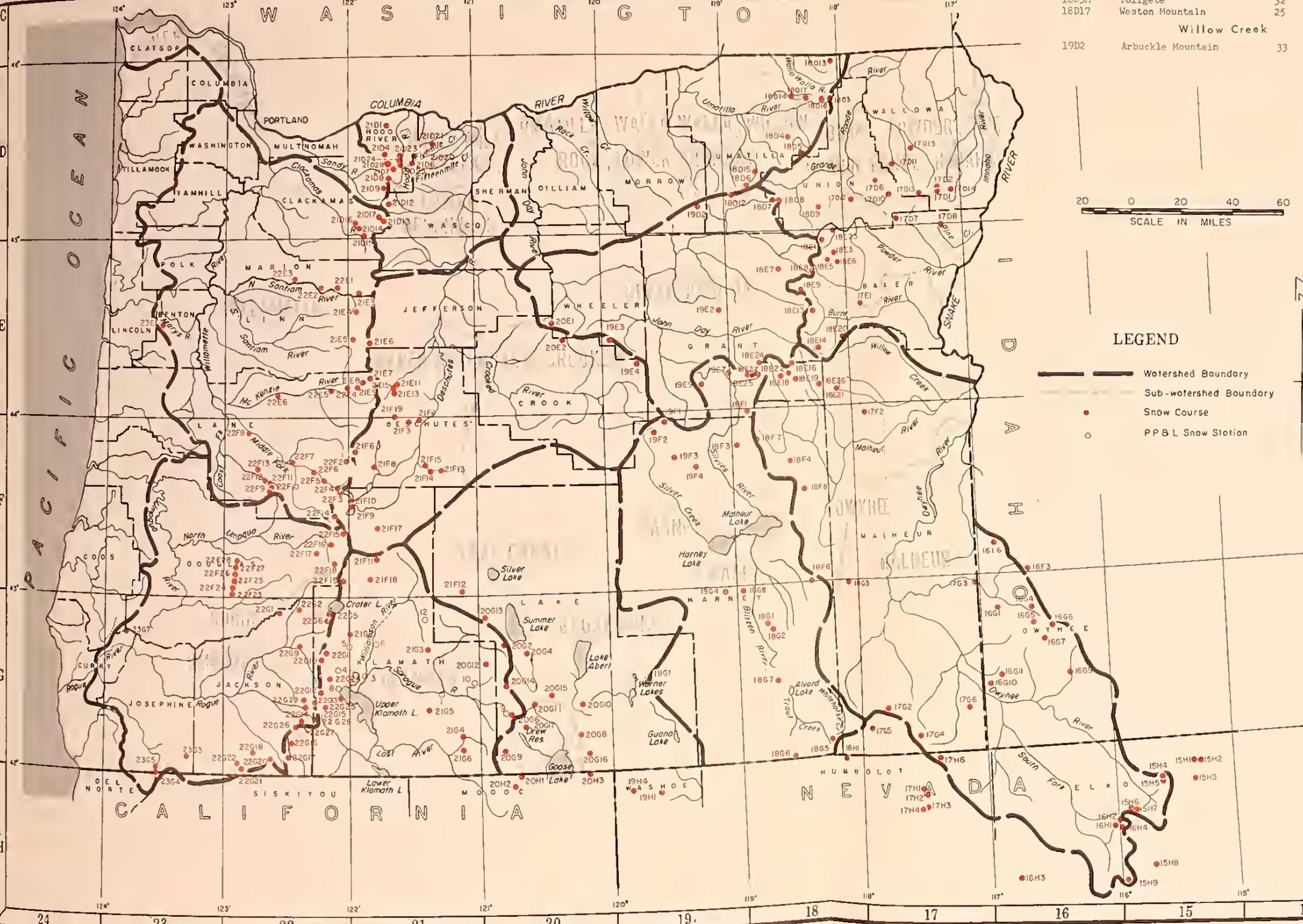
| SNOW COURSE | CURRENT INFORMATION | | | PAST RECORD | |
|----------------------------|---------------------|-----------|----------------|---------------------|------------------------|
| | NAME | ELEVATION | DATE OF SURVEY | SNOW DEPTH (Inches) | WATER CONTENT (Inches) |
| | | | | LAST YEAR | 1943-57 AVERAGE |
| Blue Mountain Springs | 5900 | 2/26 | 40 | 12.9 | 6.9 |
| Buck Pasture ^e | 5700 | 2/27 | 18 | 6.1 | 0.3 |
| Buckskin Lake ^e | 5200 | b | | | -- |
| Call Meadows ^e | 5340 | 2/27 | 12 | 3.5 | 0.0 |
| Crow Camp ^e | 5500 | 2/27 | 10 | 2.9 | 0.3 |
| Delintment Lake | 5600 | 2/25 | 24 | 6.6 | 1.3 |
| Denio Creek ^e | 6000 | 2/27 | 2 | 0.6 | 0.0 |
| Disaster Peak (Nev.) | 6500 | 3/2 | 38 | 13.1 | 0.0 |
| Emigrant Butte | 5000 | 2/25 | 16 | 4.7 | 0.0 |
| Fish Creek | 7900 | 2/26 | 65 | 21.5 | 14.3 |
| Foster Flat ^e | 5020 | 2/27 | 3 | 1.0 | 0.0 |
| Hart Mountain ^e | 6350 | 2/24 | 5 | 1.5 | 0.0 |
| Idlewild Camp | 5200 | 2/27 | 18 | 4.8 | T |
| Izee Summit | 5293 | 2/27 | 27 | 7.1 | 1.1 |
| Lake Creek R. S. | 5120 | 2/26 | 33 | 9.7 | 2.8 |
| Oregon Canyon ^e | 6950 | 2/27 | 20 | 6.0 | 0.9 |
| Rock Spring | 5100 | 2/27 | 20 | 4.9 | 0.1 |
| Silvies | 6900 | 2/26 | 33 | 11.2 | 2.0 |
| Snow Mountain | 6300 | 2/25 | 36 | 10.5 | 5.5 |
| Starr Ridge | 5150 | 2/27 | 19 | 5.2 | 0.0 |
| Stinking Water | 4800 | 2/26 | 16 | 4.1 | 0.0 |
| Trout Creek ^e | 7800 | 2/27 | 18 | 5.4 | 3.6 |
| "V" Lake ^e | 6600 | 2/27 | 12 | 4.1 | 0.8 |

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

HARNEY BASIN WATERSHEDS

10 0 10 20 30
SCALE IN MILES





| NUMBER | NAME | LOCATION SEC. TWP. RGE. | ELEV. | NUMBER | NAME | LOCATION SEC. TWP. RGE. | ELEV. | NUMBER | NAME | LOCATION SEC. TWP. RGE. | ELEV. | NUMBER | NAME | LOCATION SEC. TWP. RGE. | ELEV. | NUMBER | NAME | LOCATION SEC. TWP. RGE. | ELEV. | | | | |
|--------|-------------------|----------------------------|-------|--------|----------------|----------------------------|-------|--------|----------------------|----------------------------|-------|--------|----------------------|----------------------------|-------|--------|----------------------|----------------------------|--------|---------------|---------------------|----------------|--|
| 1606 | Antelope Ridge | (Ida) 32 8S 1W 5900 | | 17H6e | Quinn Ridge | (Nev) 9 47N 41E 6300 | | 16G1e | Red Canyon | (Ida) 32 11S 4W 6500 | | 15H5a | Rodeo Flat | (Nev) 36 43N 53E 6800 | | 6 | 42N 58E 7100 | | 17D10a | Bald Mountain | 14 & 15 4S 41E 6700 | | |
| 1693 | Bear Creek | (Nev) 31 46N 56E 6700 | | 18G1a | Silver City | (Ida) 6 55 3W 6200 | | 16F3 | Silver City | (Ida) 35 32S 32E 6900 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18D9 | Beaver Reservoir | 8 55 37E 5340 | | 18D8 | County Line | 28 2S 34E 4800 | |
| 1591A | Big Bend | 30 45N 56E 6700 | | 16F6a | Succor Creek | (Ida) 25 35 35W 6100 | | 18E13M | Blue Mountain Summit | 6 12S 36E 5098 | | 18E6 | Lucky Strike | 24 & 25 1S 35E 5050 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D5 | Meehan | 18 7S 37E 7125 | |
| 1529M | Blue Mtn Pass | 25 45N 39E 6700 | | 15H3M | Taylor Canyon | (Nev) 35 39N 53E 6200 | | 16F6a | Succor Creek | (Ida) 25 35 35W 6100 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D5 | Meehan | 18 7S 37E 7125 | | 18D6 | Meehan | 18 7S 37E 7125 | |
| 1702 | Puckskin, Lower | (Nev) 11 45N 39E 7200 | | 15H8 | Tremewan Ranch | (Nev) 9 39N 53E 5700 | | 16F6a | Taylor Canyon | (Ida) 34 10S 35E 5100 | | 18E8 | Gold Center | 21 9S 36E 5340 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1702 | Puckskin, Upper | (Nev) 11 45N 39E 7200 | | 16G4M | Triangle | (Ida) 25 7S 3W 5150 | | 18E9 | Tipton | 34 10S 35E 5100 | | 18E13 | Blue Mountain Summit | 21 1S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1703 | Puckskin | (Nev) 20 12S 5W 5600 | | 18G5a | Trout Creek | 10 41S 38E 5700 | | 18E9 | Tipton | 34 10S 35E 5100 | | 18E13 | Blue Mountain Summit | 21 1S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1620a | Bull Basin | (Nev) 8 47N 41E 6500 | | 18G5a | Trout Creek | 10 41S 38E 5700 | | 18E9 | Tipton | 34 10S 35E 5100 | | 18E13 | Blue Mountain Summit | 21 1S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1831 | Delester Peak | (Nev) 4 33S 33E 6600 | | 18G7a | "Y" Lake | 31 35S 32E 6600 | | 18E9 | Tipton | 34 10S 35E 5100 | | 18E13 | Blue Mountain Summit | 21 1S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1826M | Fish Creek | 8 30S 38E 4450 | | 18G7a | "Y" Lake | 31 35S 32E 6600 | | 18E9 | Tipton | 34 10S 35E 5100 | | 18E13 | Blue Mountain Summit | 21 1S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1655 | Folly Farm Summit | (Nev) 33 46N 58E 6800 | | 18G7a | "Y" Lake | 31 35S 32E 6600 | | 18E9 | Tipton | 34 10S 35E 5100 | | 18E13 | Blue Mountain Summit | 21 1S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1592 | Fox Creek | (Nev) 31 43N 56E 6700 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18G7a | "Y" Lake | 31 35S 32E 6600 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1587 | Fry Canyon | (Nev) 31 45N 56E 6600 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1585 | Gold Creek | (Nev) 22 44N 39E 7800 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1711 | Granite Peak | (Nev) 31 48S 2W 5800 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1655a | Hyde Feature | (Nev) 31 48S 2W 5800 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1655a | Jack Creek, Lower | (Nev) 18 42N 53E 6800 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1655M | Jack Creek, Upper | (Nev) 9 42N 53E 6800 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1652 | Jack Peak | (Nev) 28 42N 53E 8200 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1703a | Jordan Valley | 9 30S 46E 4300 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1703a | Lookout Butte | 27 40S 44E 6400 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1703a | Louise Canyon | 18 40N 46E 6700 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1703a | Martin Creek | 18 39N 46E 7200 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1653 | Midas | (Ida) 34 9S 5W 5500 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1657M | Mud Flat | (Ida) 8 40S 40E 6950 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1705a | Oregon Canyon | 8 40S 40E 6950 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1606 | Owyhee River | (Nev) 32 8S 1W 5900 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | | 18D6 | Lucky Strike | 28 3S 43E 4800 | |
| 1693 | Owyhee River | (Nev) 32 8S 1W 5900 | | 18E14 | Burnt River | 16 14S 36E 5950 | | 18E14 | Barney Creek | 16 14S 36E 5950 | | 18E13 | Blue Mountain Summit | 6 12S 36E 5340 | | 18D6 | Lucky Strike | 28 3S 43 | | | | | |

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

Idaho Cooperative Snow Surveys
Nevada Cooperative Snow Surveys
Oregon State University
Oregon State Engineer and Corps of State Watermasters
Oregon State Highway Engineers
Soil Conservation Districts of Oregon

COUNTY

Douglas County Water Resources Survey

FEDERAL

Department of Agriculture
Cooperative Extension Service
Forest Service
Soil Conservation Service
Department of Commerce
Weather Bureau
Department of the Interior
Bonneville Power Administration
Bureau of Land Management
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
National Park Service
Department of National Defense
Corps of Army Engineers

PUBLIC UTILITIES

Pacific Power and Light Company
Portland General Electric Company
California-Pacific Utilities Company

MUNICIPALITIES

City of Baker
City of La Grande
City of The Dalles
City of Walla Walla

IRRIGATION DISTRICTS

Arnold Irrigation District
Associated Ditch Companies
Burnt River Irrigation District
Central Oregon Irrigation District
East Fork Irrigation District
Grants Pass Irrigation District
Jordan Valley Irrigation District
Lakeview Water Users, Incorporated
Medford Irrigation District
North Board of Control - Owyhee Project
North Unit Irrigation District
Ochoco Irrigation District
Rogue River Valley Irrigation District
South Board of Control - Owyhee Project
Squaw Creek Irrigation District
Talent Irrigation District
Tumalo Project
Vale-Oregon Irrigation District
Warmsprings Irrigation District

PRIVATE ORGANIZATIONS

Amalgamated Sugar Company
The Crag Rats, Hood River, Oregon

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*“The Conservation of Water begins
with the Snow Survey”*